

## **CHAPTER 4**

### **POINT AND NONPOINT SOURCE CHARACTERIZATION OF THE POWELL RIVER WATERSHED**

#### **4.1 Background.**

#### **4.2. Characterization of HUC-10 Subwatersheds**

##### **4.2.A. 0601020602 (Powell River)**

##### **4.2.B. 0601020603 (Powell River)**

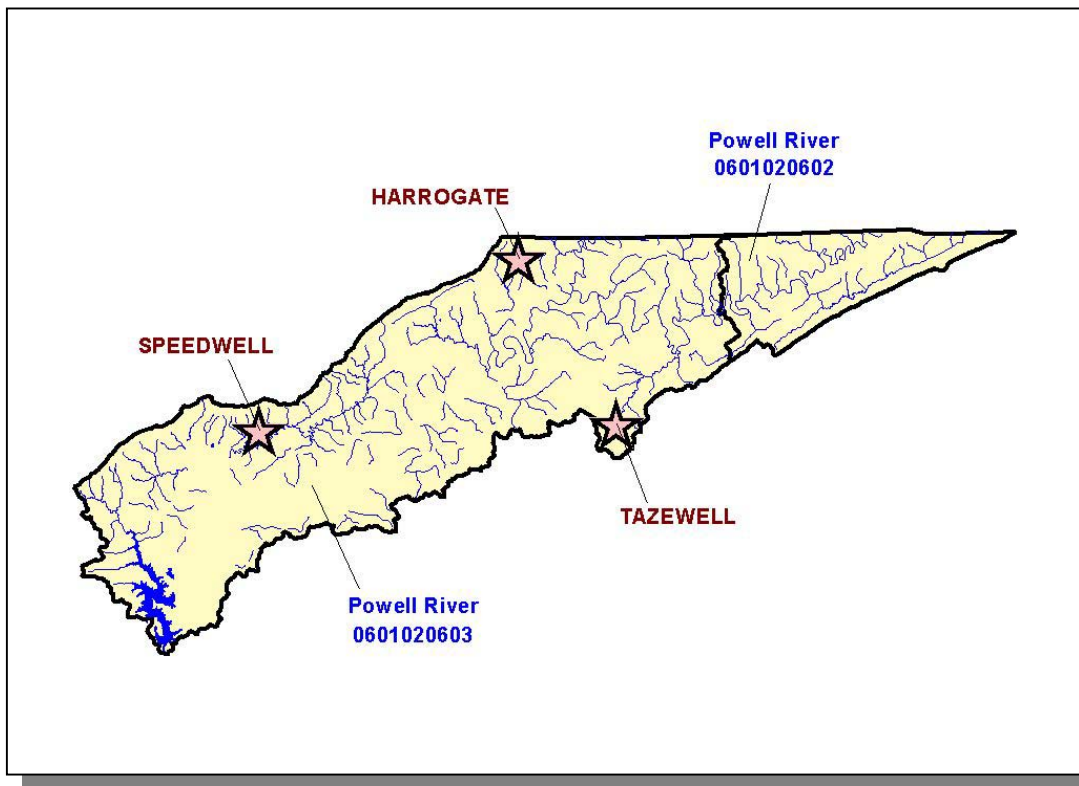
**4.1. BACKGROUND.** This chapter is organized by HUC-12 subwatershed, and the description of each subwatershed is divided into four parts:

- i. General description of the subwatershed
- ii. Description of point source contributions
  - ii.a. Description of facilities discharging to water bodies listed on the 2004 303(d) list
- iii. Description of nonpoint source contributions

The Tennessee portion of the Powell River Watershed (HUC 06010206) has been delineated into two HUC 10 (10-digit) subwatersheds, each of which is composed of one or more HUC-12 subwatersheds.

Information for this chapter was obtained from databases maintained by the Division of Water Pollution Control or provided in the WCS (Watershed Characterization System) data set. The WCS used was version 2.0 (developed by Tetra Tech, Inc for EPA Region 4) released in 2003.

WCS integrates with ArcView<sup>®</sup> v3.x and Spatial Analyst<sup>®</sup> v1.1 to analyze user-delineated (sub)watersheds based on hydrologically connected water bodies. Reports are generated by integrating WCS with Microsoft<sup>®</sup> Word. Land Use/Land Cover information from 1992 MRLC (Multi-Resolution Land Cover) data are calculated based on the proportion of county-based land use/land cover in user-delineated (sub)watersheds. Nonpoint source data in WCS are based on agricultural census data collected 1992–1998; nonpoint source data were reviewed by Tennessee NRCS staff.



**Figure 4-1. The Tennessee Portion of the Powell River Watershed is Composed of Two USGS-Delineated Subwatersheds (10-Digit Subwatersheds).** Locations of Harrogate, Speedwell, and Tazewell are shown for reference.

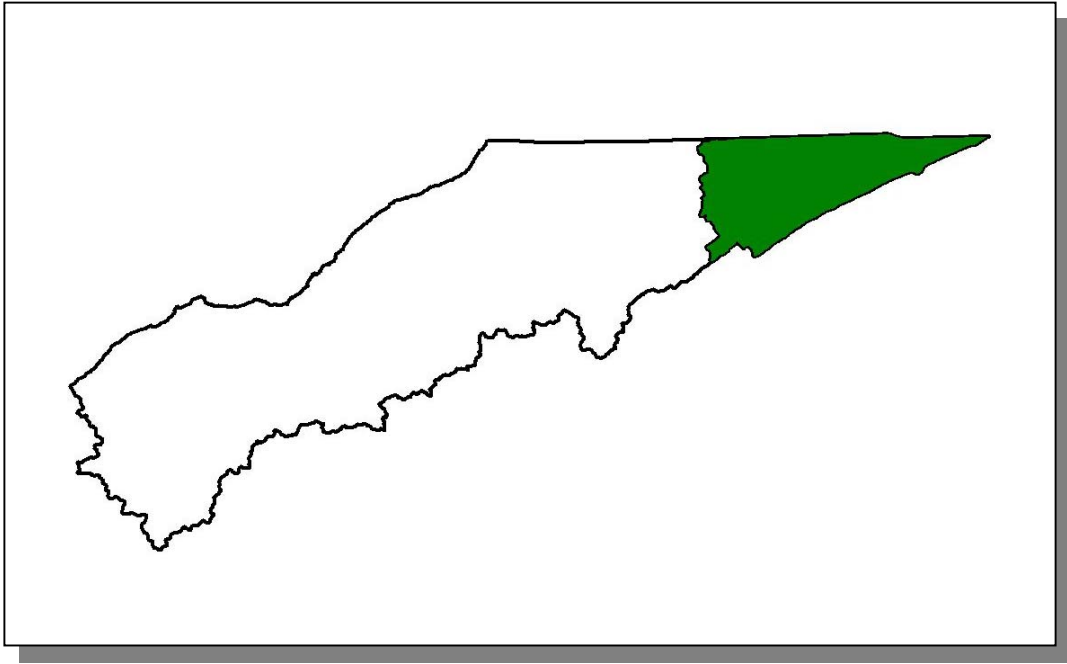
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**4.2. CHARACTERIZATION OF HUC-10 SUBWATERSHEDS.** The Watershed Characterization System (WCS) software and data sets provided by EPA Region IV were used to characterize each subwatershed in the Tennessee portion of the Powell River Watershed.

HUC-10	HUC-12
0601020602	060102060202 (Wallen Creek)
	060102060203 (Powell River)
	060102060204 (Martin Creek)
	060102060205 (Mulberry Creek)
0601020603	060102060301 (Powell River)
	060102060302 (Russell Creek)
	060102060303 (Indian Creek)
	060102060304 (Powell River)
	060102060305 (Upper Norris Lake)
	060102060306 (Middle Norris Lake)
	060102060307 (Davis Creek)
	060102060308 (Lower Norris Lake)

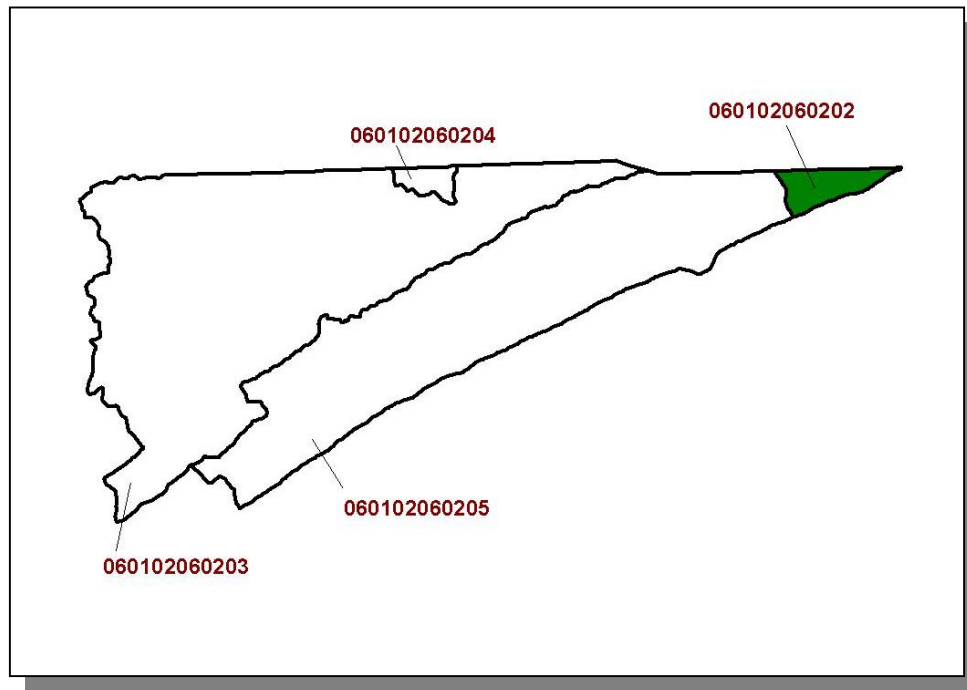
**Table 4-1. HUC-12 Drainage Areas are Nested Within HUC-10 Drainages.** NRCS worked with USGS to delineate the HUC-10 and HUC-12 drainage boundaries.

**4.2.A. 0601020602.**



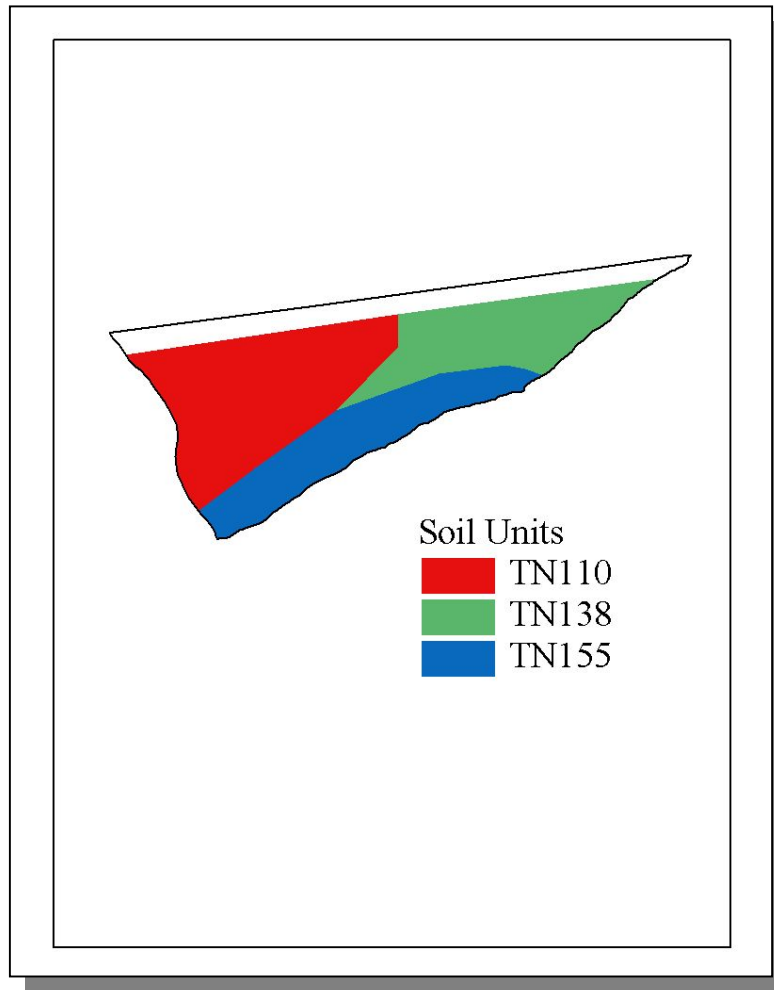
**Figure 4-2. Location of Subwatershed 0601020602.** All Powell River HUC-10 subwatershed boundaries in Tennessee are shown for reference.

**4.2.A.i. 060102060202 (Wallen Creek).**



**Figure 4-3. Location of Subwatershed 060102060202.** All HUC-12 subwatershed boundaries are shown for reference.

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**Figure 4-4. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060202.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31
TN138	0.00	C	2.48	4.26	Sandy Loam	0.22
TN155	0.00	C	1.71	5.31	Loam	0.32

**Table 4-2. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060202.** The definition of "Hydrologic Group" is provided in Appendix IV.

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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Hancock	6,739	6,801	6,786	0.21	14	14	14	0.0

**Table 4-3. Population Estimates in Subwatershed 060102060202.**

**4.2.A.i.a. Point Source Contributions.**

There are no point source contributions in this subwatershed.

**4.2.A.i.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS	
Beef Cow	Cattle
<5	<5

**Table 4-4. Summary of Livestock Count Estimates in Subwatershed 060102060202.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS					
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Sheep
Hancock	7,079	14,311	89	364	67

**Table 4-5. Summary of Livestock Count Estimates in Hancock County.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hancock	92.9	92.9	2.7	14.2

**Table 4-6. Forest Acreage and Annual Removal Rates (1987-1994) in Hancock County.**

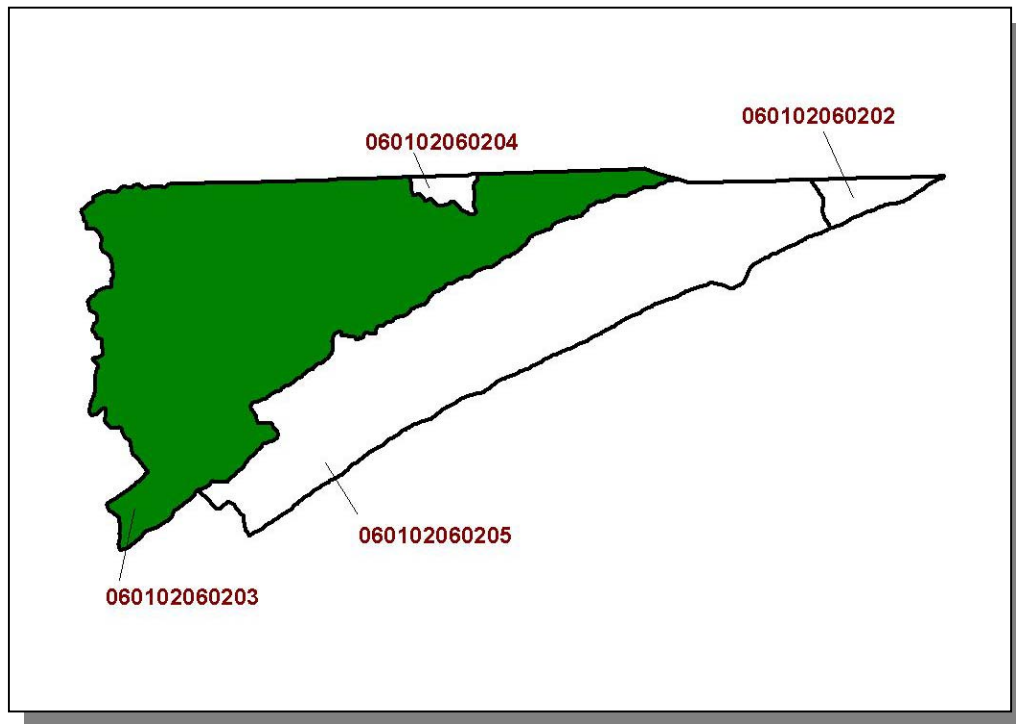
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<b>CROPS</b>	<b>TONS/ACRE/YEAR</b>
Grass (Pastureland)	2.54
Grass (Hayland)	0.66
Grass, Forbs, Legumes (Mixed Pasture)	0.79
Corn (Row Crops)	2.42
Tobacco (Row Crops)	23.03
Farmsteads and Ranch Headquarters	0.03

***Table 4-7. Annual Estimated Total Soil Loss in Subwatershed 060102060202.***

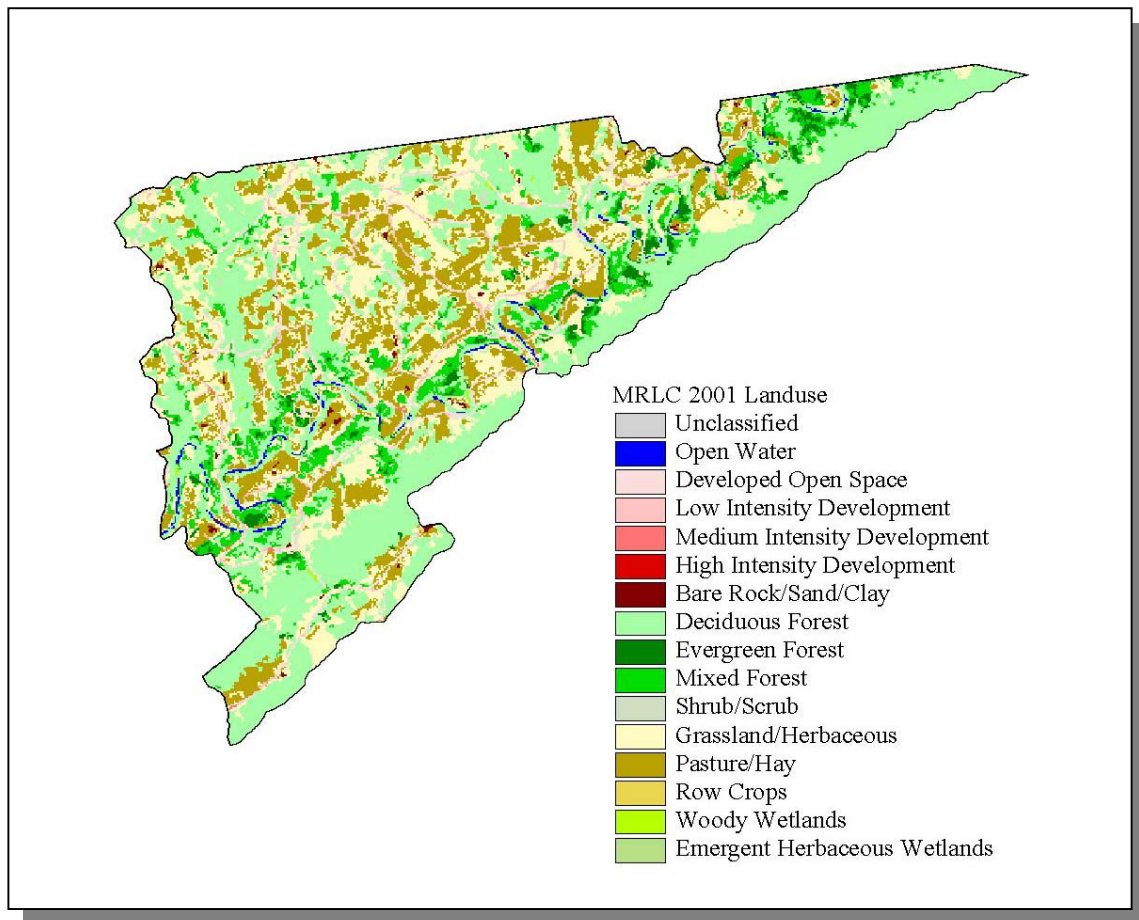


**4.2.A.ii. 060102060203 (Powell River).**

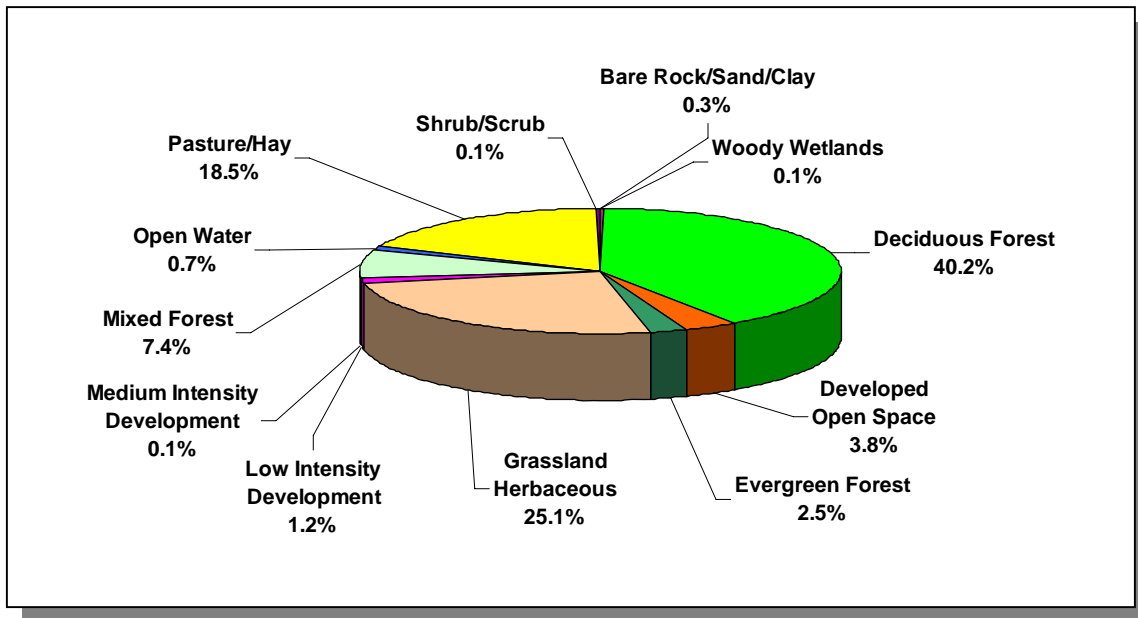


**Figure 4-5. Location of Subwatershed 060102060203.** All HUC-12 subwatershed boundaries are shown for reference.

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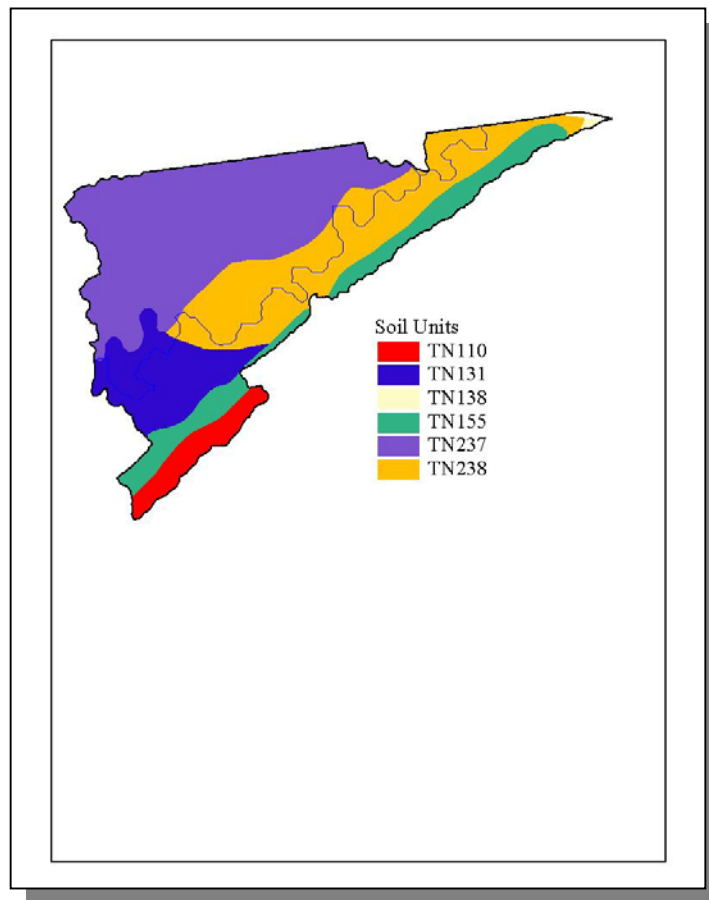


**Figure 4-6. Illustration of Land Use Distribution in Subwatershed 060102060203.**



*Figure 4-7. Land Use Distribution in Subwatershed 060102060203. More information is provided in Appendix IV.*

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**Figure 4-8. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060203.**

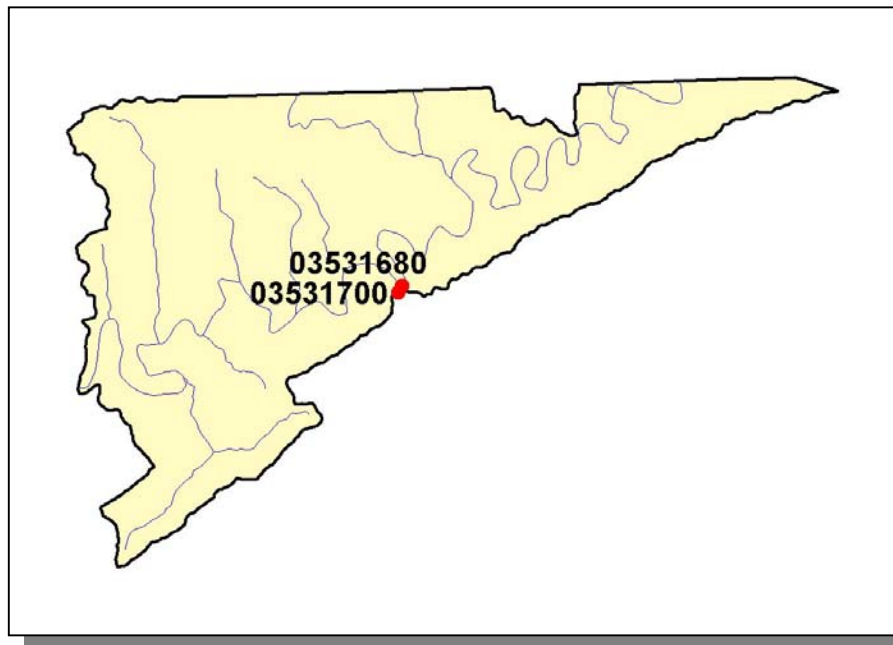
STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN138	0.00	C	2.48	4.26	Sandy Loam	0.22
TN155	0.00	C	1.71	5.31	Loam	0.32
TN237	0.00	B	3.36	5.40	Silty Loam	0.32
TN238	0.00	C	0.93	6.00	Silty Clayey Loam	0.35

**Table 4-8. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060203.** The definition of "Hydrologic Group" is provided in Appendix IV.

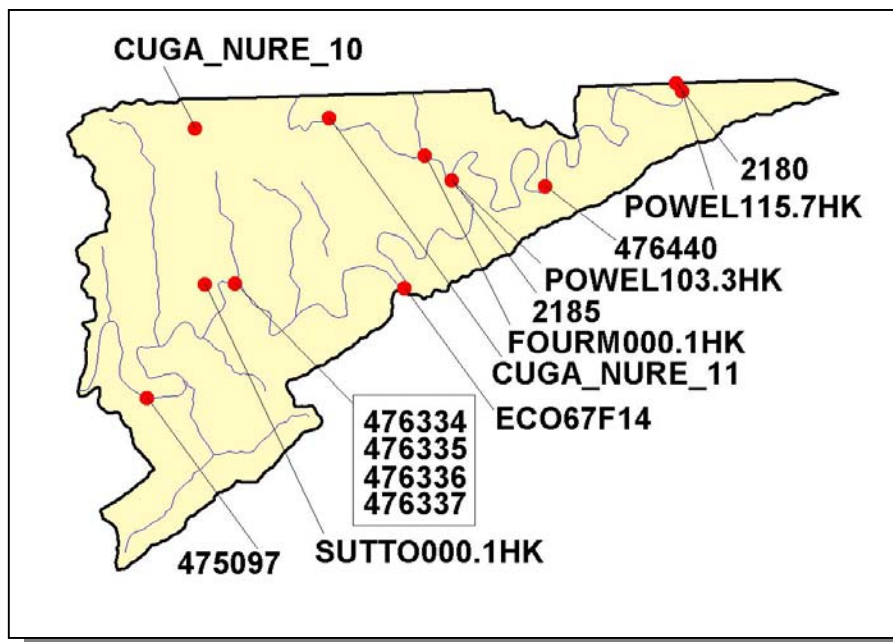
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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Claiborne	26,137	28,963	29,862	2.8	731	810	835	14.2
Hancock	6,739	6,801	6,786	8.55	576	582	581	0.9
<b>Total</b>	<b>32,876</b>	<b>35,764</b>	<b>36,648</b>		<b>1,307</b>	<b>1,392</b>	<b>1,416</b>	<b>8.3</b>

*Table 4-9. Population Estimates in Subwatershed 060102060203.*



**Figure 4-9. Location of Historical Streamflow Data Collection Sites in Subwatershed 060102060203.** More information is provided in Appendix IV.



**Figure 4-10. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060102060203.** More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.

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**4.2.A.ii.a. Point Source Contributions.**

There are no point source contributions in this subwatershed.

**4.2.A.ii.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS				
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Sheep
1,945	3,885	56	5	18

**Table 4-10. Summary of Livestock Count Estimates in Subwatershed 060102060203.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS					
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Sheep
Claiborne	18,697	36,566	1,082	420	165
Hancock	7,079	14,311	89	364	67

**Table 4-11. Summary of Livestock Count Estimates in Claiborne and Hancock Counties.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

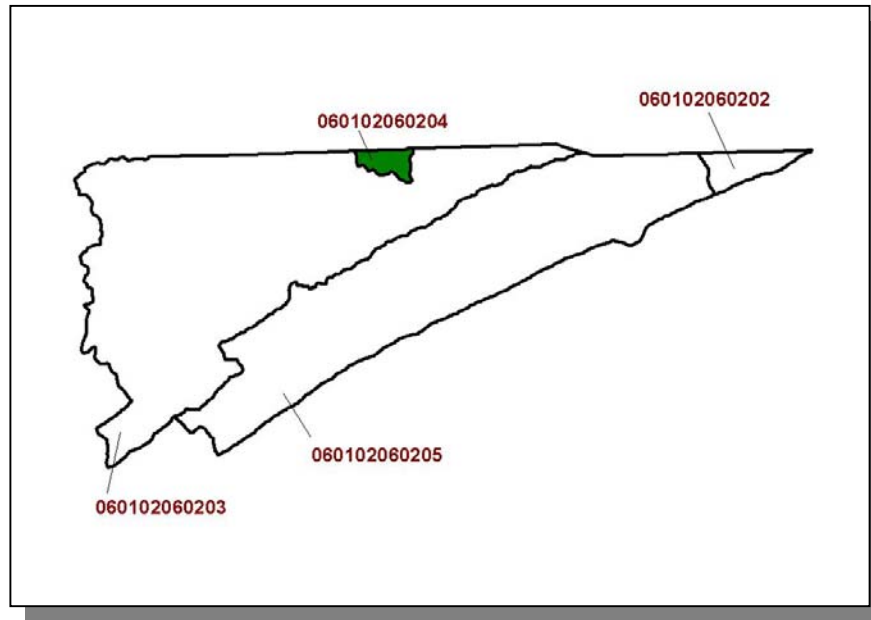
County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Claiborne	167.6	167.6	2.6	12.1
Hancock	92.9	92.9	2.7	14.2

**Table 4-12. Forest Acreage and Annual Removal Rates (1987-1994) in Claiborne and Hancock Counties.**

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	1.66
Grass (Hayland)	0.66
Grass, Forbs, Legumes (Mixed Pasture)	0.52
Corn (Row Crops)	2.42
Tobacco (Row Crops)	23.03
Farmsteads and Ranch Headquarters	0.19

**Table 4-13. Annual Estimated Total Soil Loss in Subwatershed 060102060203.**

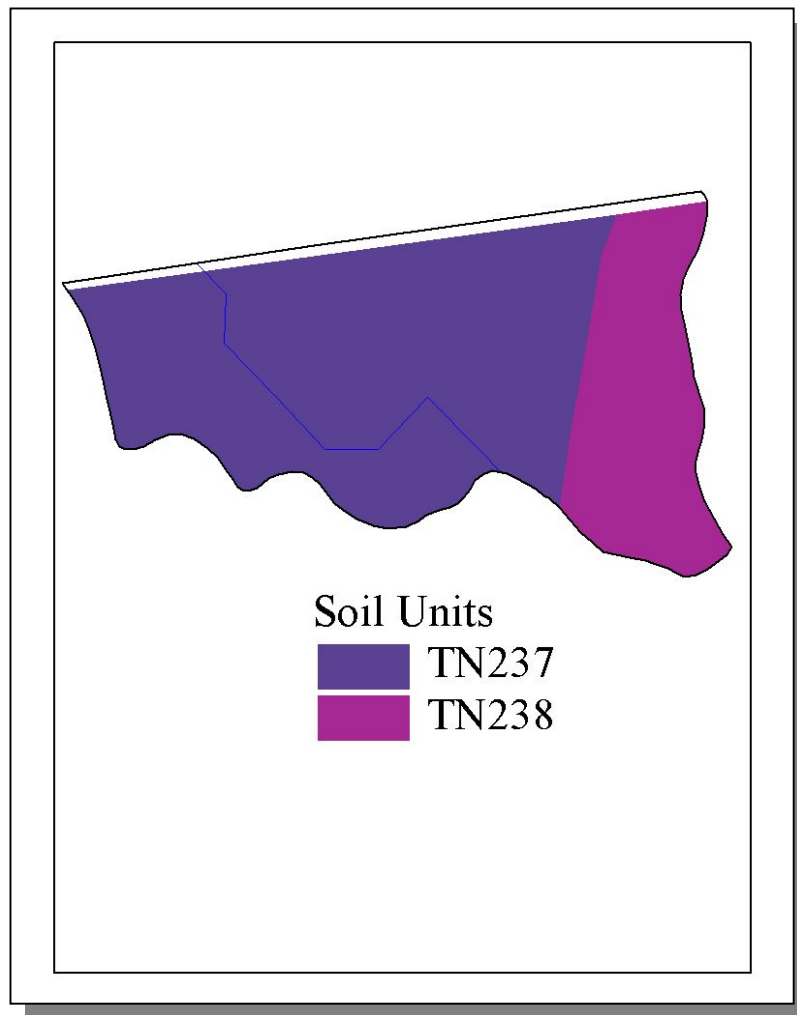
**4.2.A.iii. 060102060204 (Martin Creek).**



**Figure 4-11. Location of Subwatershed 060102060204.** All HUC-12 subwatershed boundaries are shown for reference.



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**Figure 4-12. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060204.**

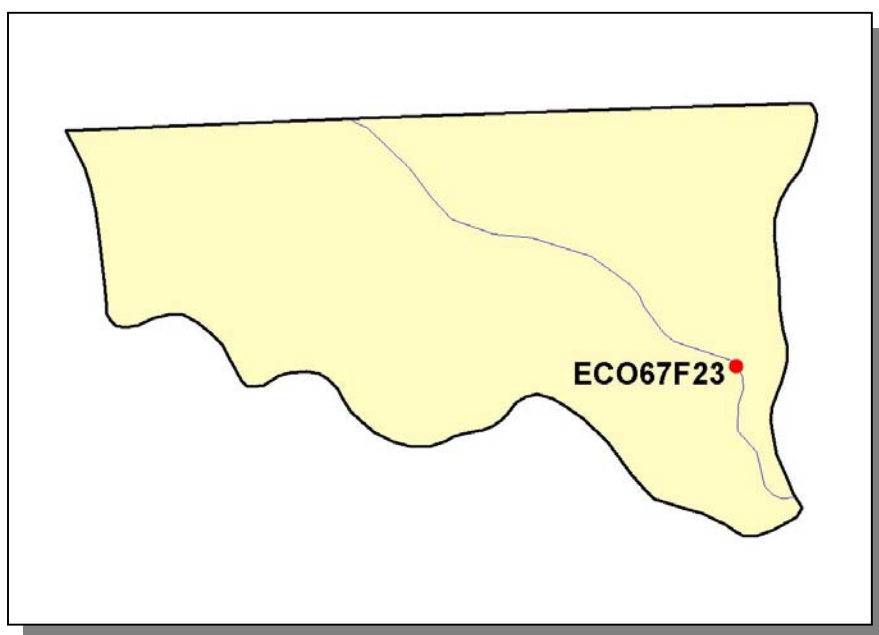
STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN237	0.00	B	3.36	5.40	Silty Loam	0.32
TN238	0.00	C	0.93	6.00	Silty Clayey Loam	0.35

**Table 4-14. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060204.** The definition of "Hydrologic Group" is provided in Appendix IV.

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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Hancock	6,739	6,801	6,786	0.29	19	20	20	5.3

**Table 4-15. Population Estimates in Subwatershed 060102060204.**



**Figure 4-13. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060102060204.** More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.

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**4.2.A.iii.a. Point Source Contributions.**

There are no point source contributions in this subwatershed.

**4.2.A.iii.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS			
Beef Cow	Cattle	Milk Cow	Sheep
73	148	<5	<5

**Table 4-16. Summary of Livestock Count Estimates in Subwatershed 060102060204.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

LIVESTOCK COUNTS					
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Sheep
Hancock	7,079	14,311	89	364	67

**Table 4-17. Summary of Livestock Count Estimates in Hancock County.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

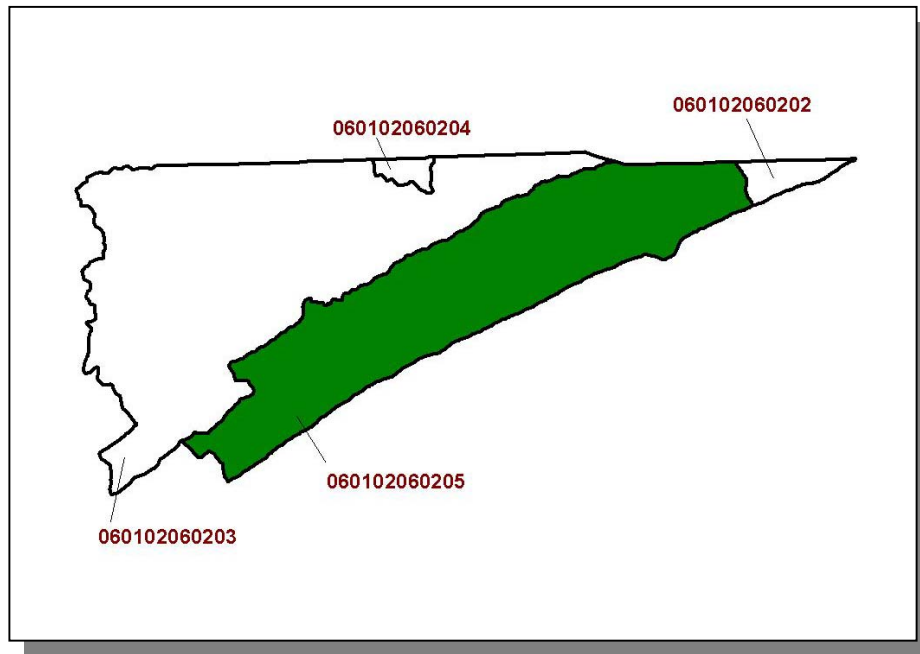
County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Hancock	92.9	92.9	2.7	14.2

**Table 4-18. Forest Acreage and Annual Removal Rates (1987-1994) in Hancock County.**

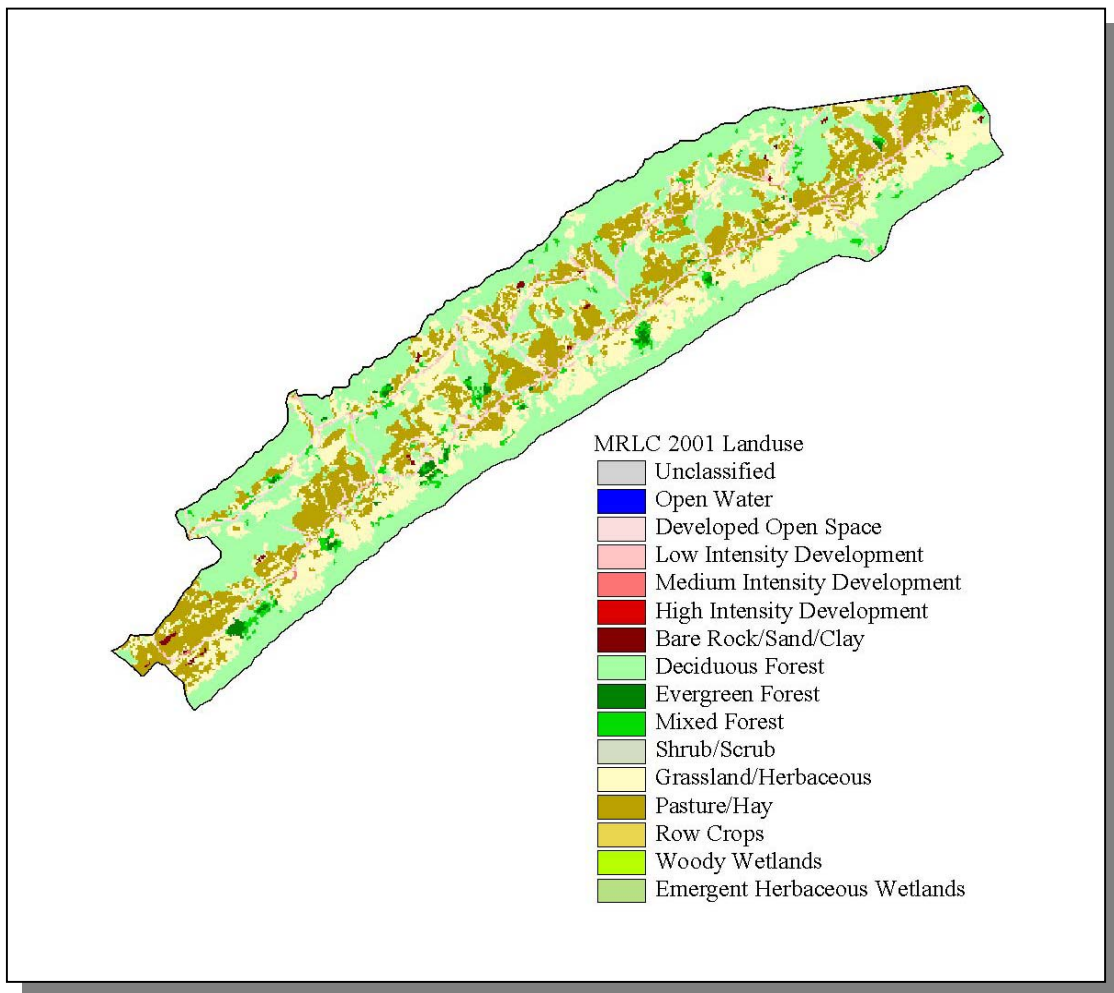
CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	2.54
Grass (Hayland)	0.66
Grass, Forbs, Legumes (Mixed Pasture)	0.79
Corn (Row Crops)	2.42
Tobacco (Row Crops)	23.03
Farmsteads and Ranch Headquarters	0.03

**Table 4-19. Annual Estimated Total Soil Loss in Subwatershed 060102060204.**

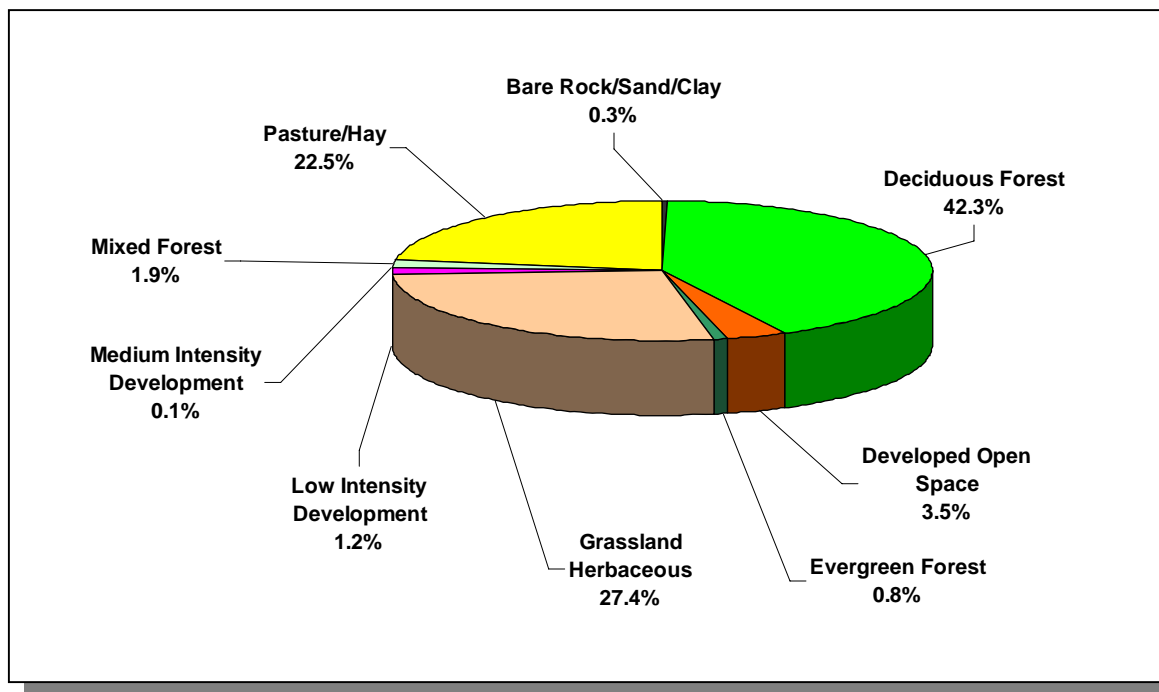
**4.2.A.iv. 060102060205 (Mulberry Creek).**



**Figure 4-14. Location of Subwatershed 060102060205.** All HUC-12 subwatershed boundaries are shown for reference.

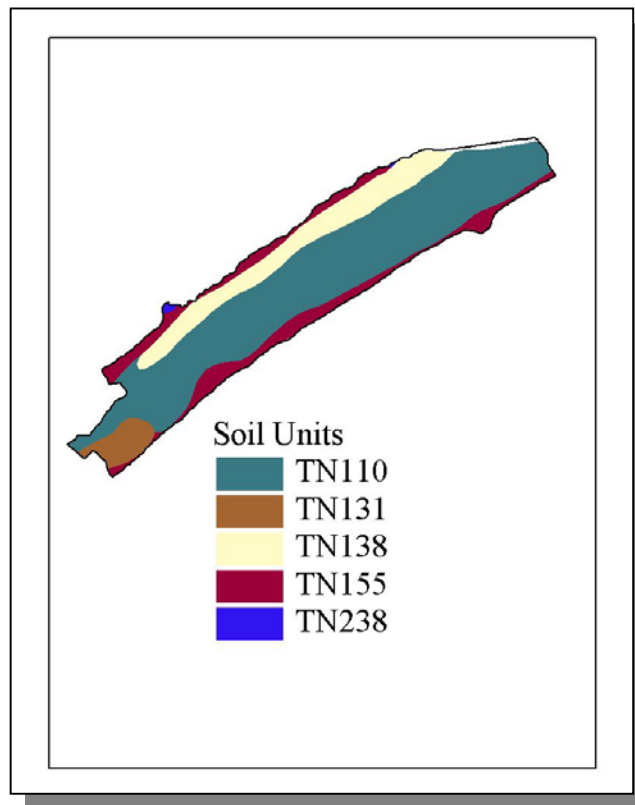


**Figure 4-15. Illustration of Land Use Distribution in Subwatershed 060102060205.**



**Figure 4-16. Land Use Distribution in Subwatershed 060102060205.** More information is provided in Appendix IV.

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**Figure 4-17. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060205.**

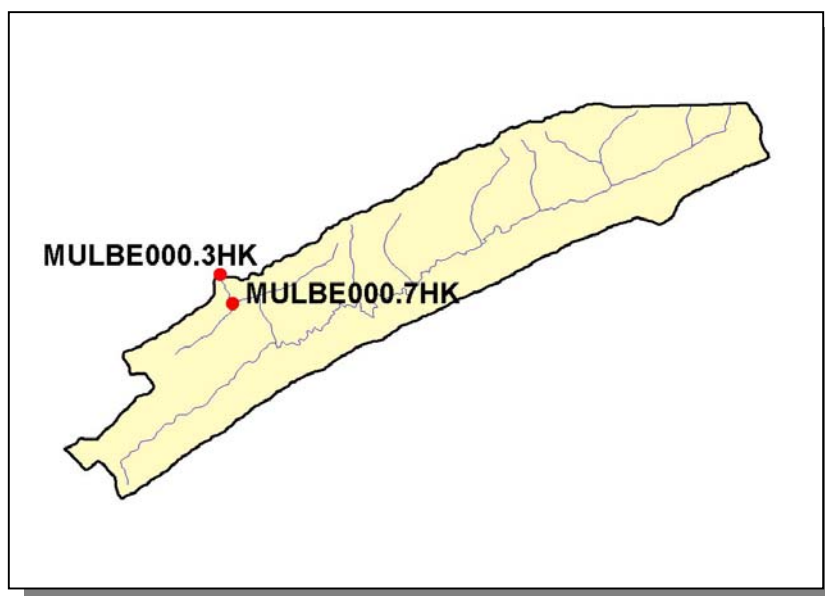
STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN138	0.00	C	2.48	4.26	Sandy Loam	0.22
TN155	0.00	C	1.71	5.31	Loam	0.32
TN238	0.00	C	0.93	6.00	Silty Clayey Loam	0.35

**Table 4-20. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060205.** The definition of "Hydrologic Group" is provided in Appendix IV.

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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Claiborne	26,137	28,963	29,862	0.57	150	166	171	14.0
Hancock	6,739	6,801	6,786	9.2	620	625	624	0.6
<b>Total</b>	<b>35,764</b>	<b>36,648</b>		<b>770</b>	<b>791</b>	<b>795</b>	<b>3.2</b>	

*Table 4-21. Population Estimates in Subwatershed 060102060205.*



*Figure 4-18. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060102060205. More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.*



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**4.2.A.iv.a. Point Source Contributions.**

There are no point source contributions in this subwatershed.

**4.2.A.iv.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS				
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Sheep
1,477	2,970	29	<5	14

**Table 4-22. Summary of Livestock Count Estimates in Subwatershed 060102060205.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS					
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Sheep
Claiborne	18,697	36,566	1,082	420	165
Hancock	7,079	14,311	89	364	67

**Table 4-23. Summary of Livestock Count Estimates in Claiborne and Hancock Counties.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

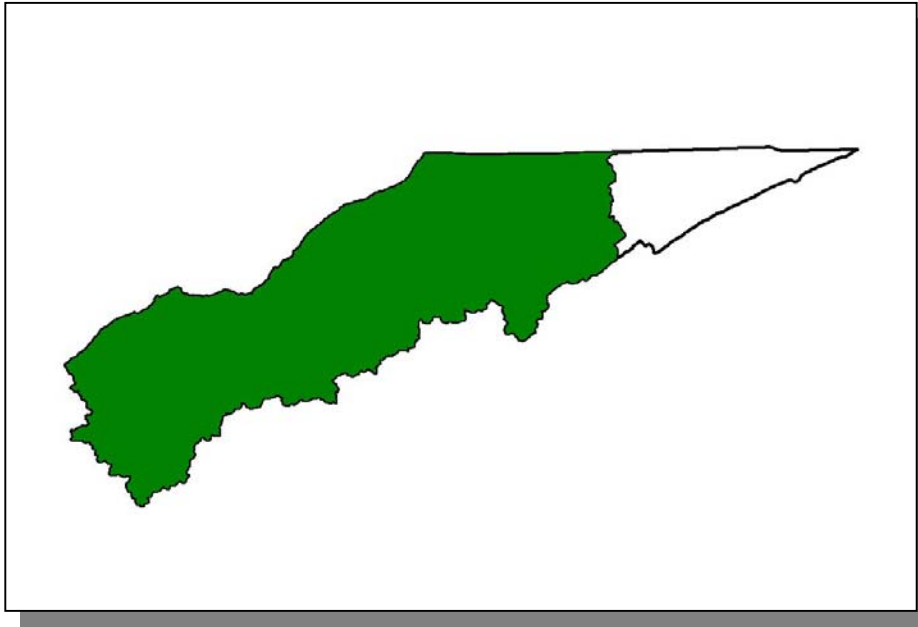
County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Claiborne	167.6	167.6	2.6	12.1
Hancock	92.9	92.9	2.7	14.2

**Table 4-24. Forest Acreage and Annual Removal Rates (1987-1994) in Claiborne and Hancock Counties.**

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	2.29
Grass (Hayland)	0.66
Grass, Forbs, Legumes (Mixed Pasture)	0.71
Corn (Row Crops)	2.42
Tobacco (Row Crops)	23.03
Farmsteads and Ranch Headquarters	0.08

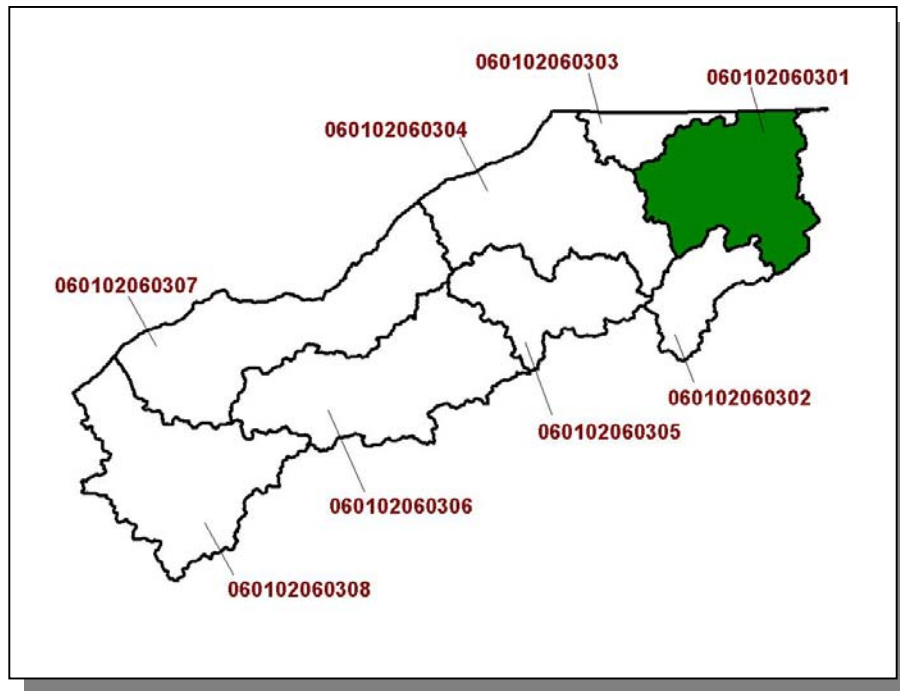
**Table 4-25. Annual Estimated Total Soil Loss in Subwatershed 060102060205.**

**4.2.B. 0601020603.**

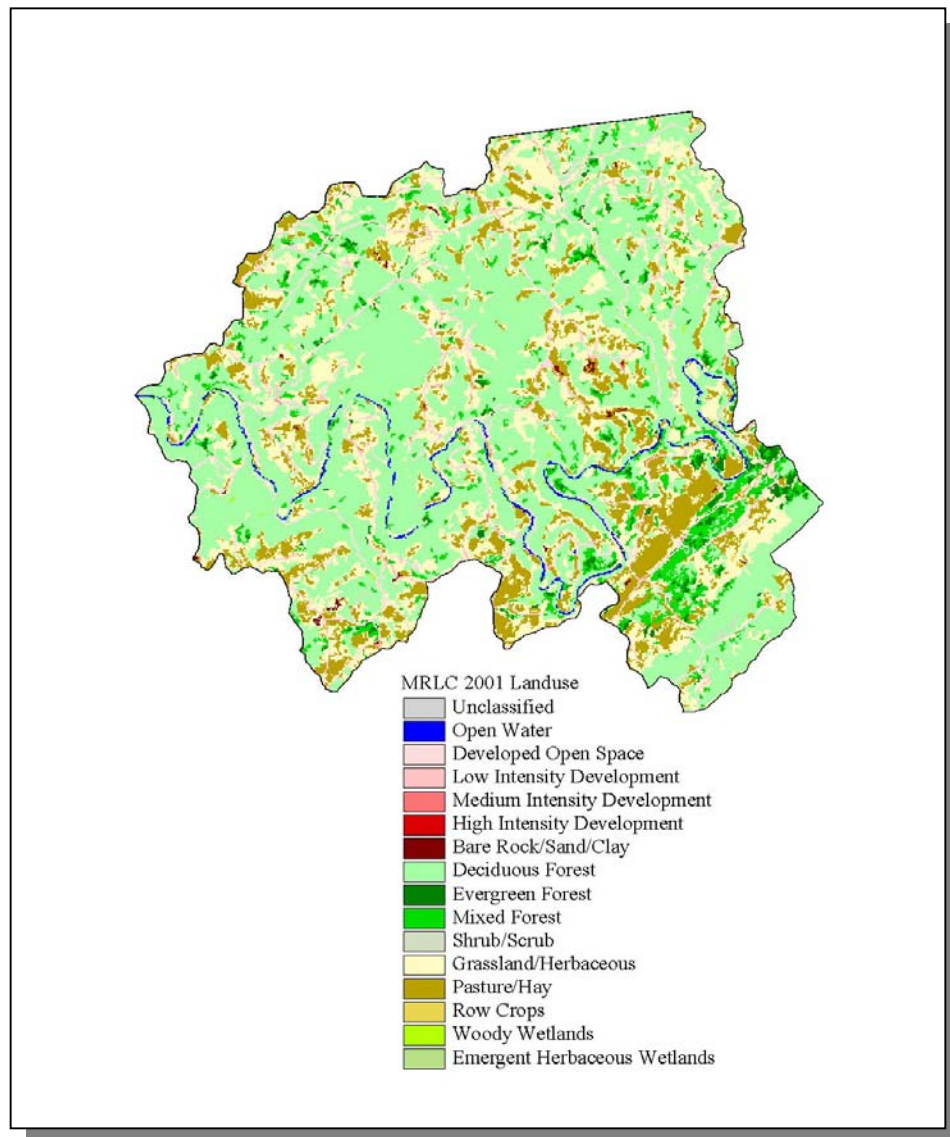


**Figure 4-19. Location of Subwatershed 0601020603.** All Powell River HUC-10 subwatershed boundaries in Tennessee are shown for reference.

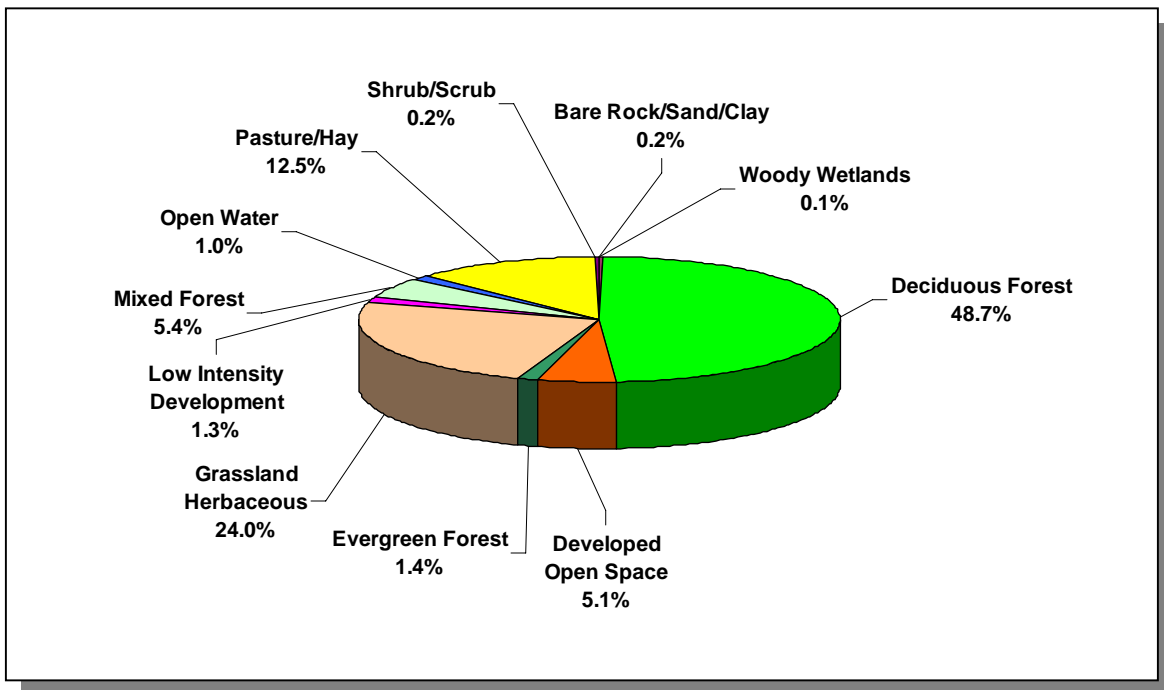
**4.2.B.i. 060102060301 (Powell River).**



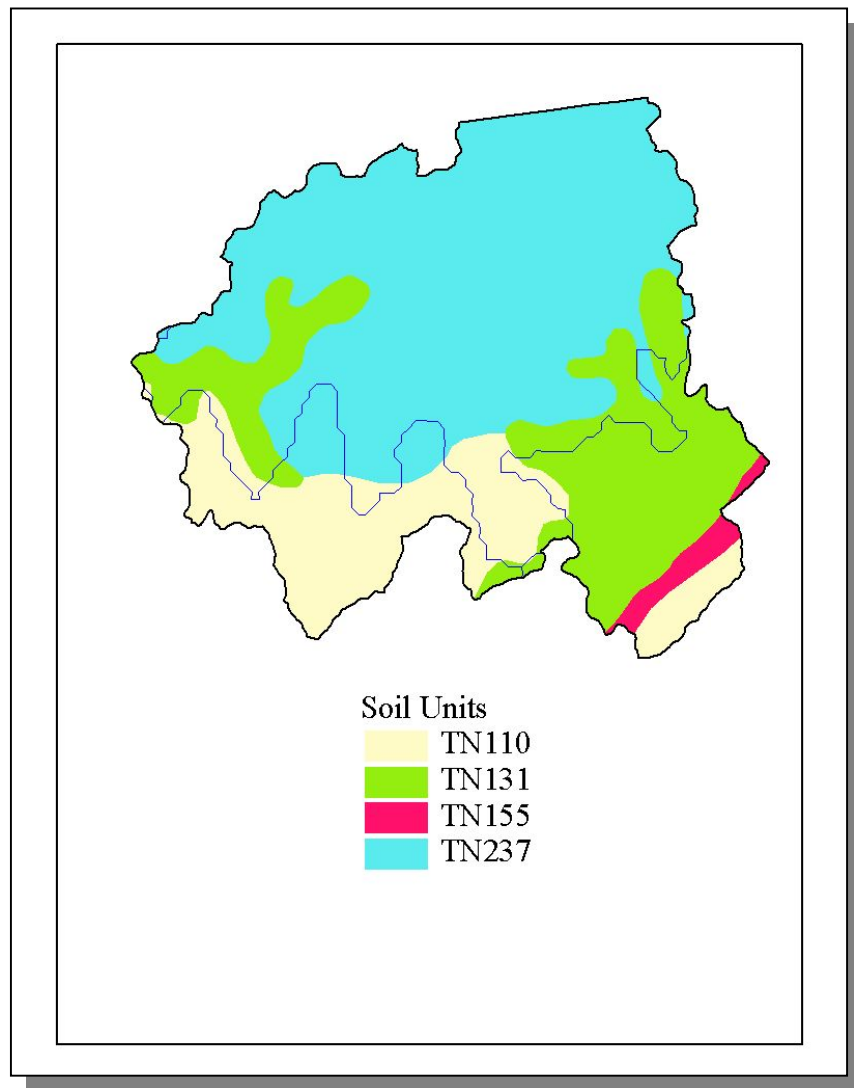
**Figure 4-20. Location of Subwatershed 060102060301.** All HUC-12 subwatershed boundaries are shown for reference.



**Figure 4-21. Illustration of Land Use Distribution in Subwatershed 060102060301.**



**Figure 4-22. Land Use Distribution in Subwatershed 060102060301.** More information is provided in Appendix IV.



**Figure 4-23. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060301.**

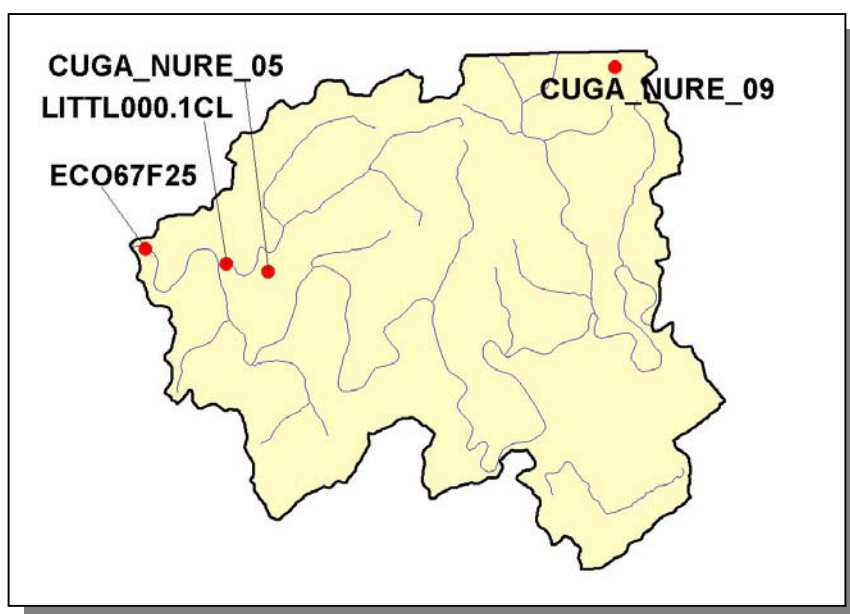
STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN155	0.00	C	1.71	5.31	Loam	0.32
TN237	0.00	B	3.36	5.40	Silty Loam	0.32

**Table 4-26. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060301.** The definition of "Hydrologic Group" is provided in Appendix IV.

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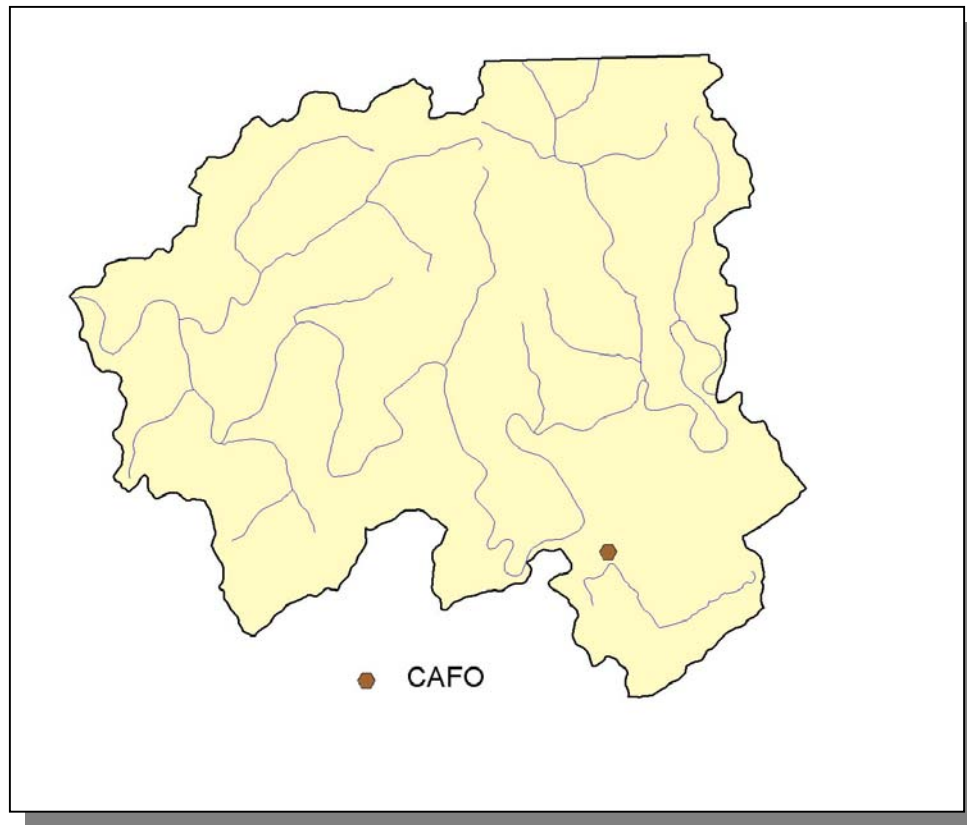
County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Claiborne	26,137	28,963	29,862	9.92	2,592	2,872	2,961	14.2

**Table 4-27. Population Estimates in Subwatershed 060102060301.**



**Figure 4-24. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060102060301.** More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.

**4.2.B.i.a. Point Source Contributions.**



**Figure 4-25. Location of Permits Issued in Subwatershed 060102060301.** More information, including the names of facilities, is provided in Appendix IV.





**Figure 4-26. Location of Concentrated Animal Feeding Operations in Subwatershed 060102060301.** More information, including the names of facilities, is provided in Appendix IV.

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**4.2.B.i.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS				
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Sheep
1,881	3,678	109	3	17

**Table 4-28. Summary of Livestock Count Estimates in Subwatershed 060102060301.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Claiborne	18,697	36,566	1,082	420		165

**Table 4-29. Summary of Livestock Count Estimates in Claiborne County.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

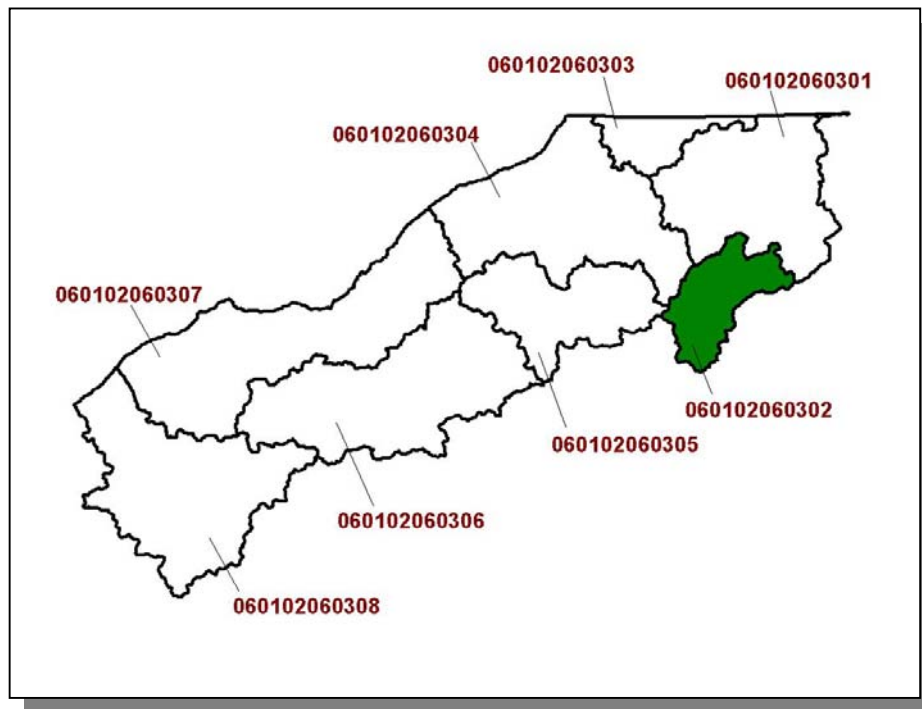
County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Claiborne	167.6	167.6	2.6	12.1

**Table 4-30. Forest Acreage and Annual Removal Rates (1987-1994) in Claiborne County.**

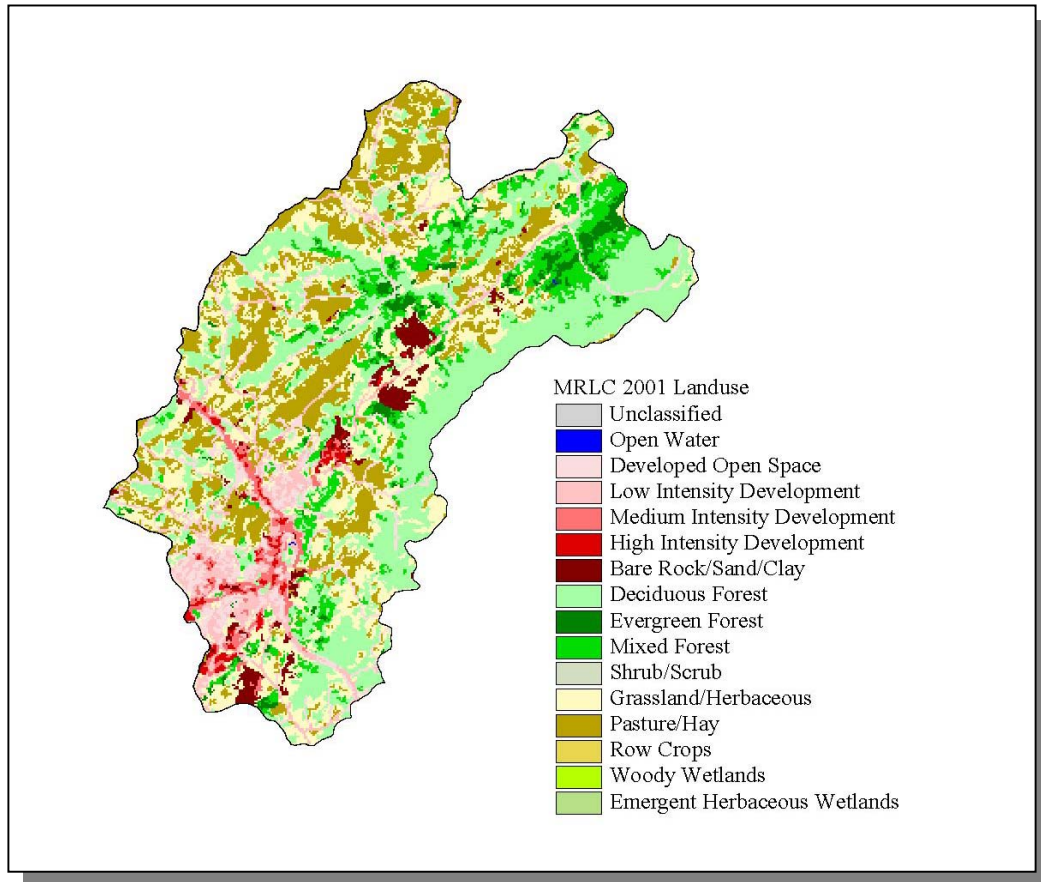
CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.38
Grass, Forbs, Legumes (Mixed Pasture)	0.13
Farmsteads and Ranch Headquarters	0.43

**Table 4-31. Annual Estimated Total Soil Loss in Subwatershed 060102060301.**

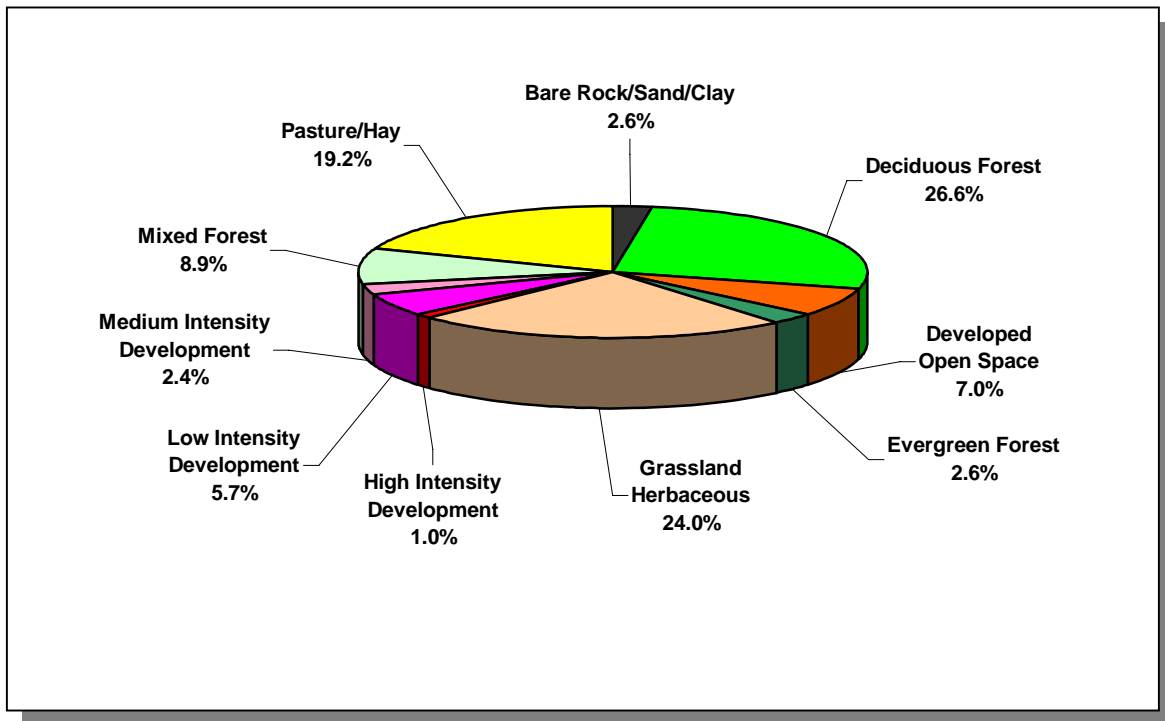
**4.2.B.ii. 060102060302 (Russell Creek).**



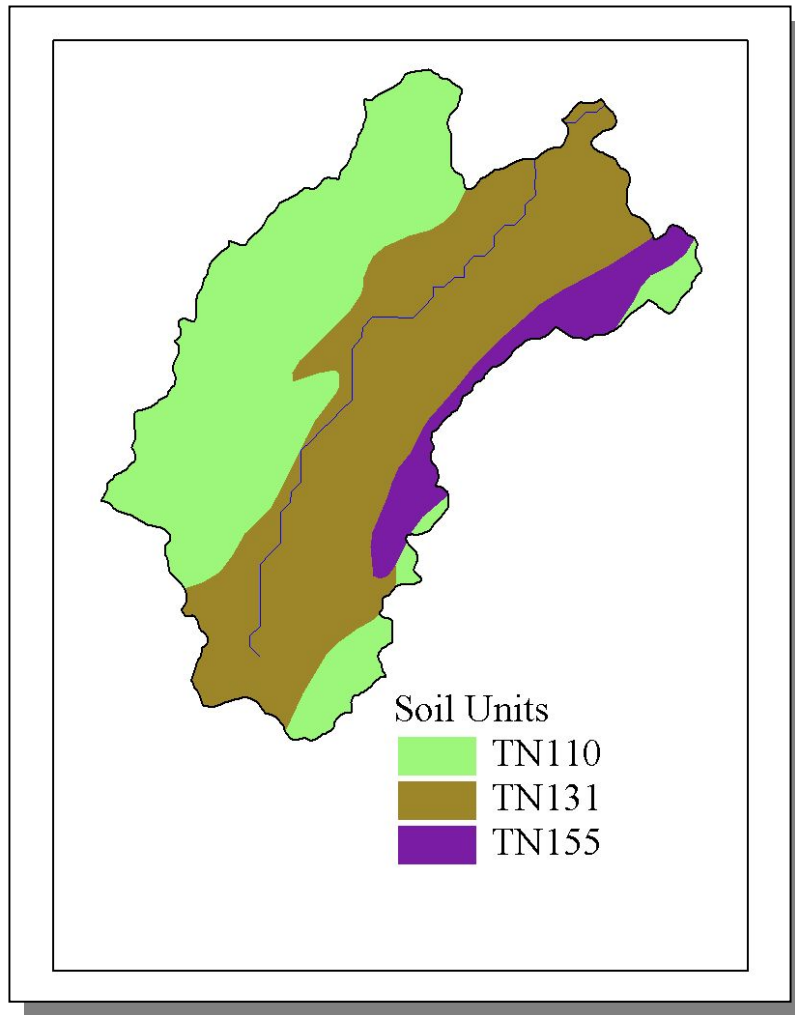
**Figure 4-27. Location of Subwatershed 060102060302.** All HUC-12 subwatershed boundaries are shown for reference.



**Figure 4-28. Illustration of Land Use Distribution in Subwatershed 060102060302.**



**Figure 4-29. Land Use Distribution in Subwatershed 060102060302.** More information is provided in Appendix IV.



**Figure 4-30. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060302.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN155	0.00	C	1.71	5.31	Loam	0.32

**Table 4-32. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060302.** The definition of "Hydrologic Group" is provided in Appendix IV.

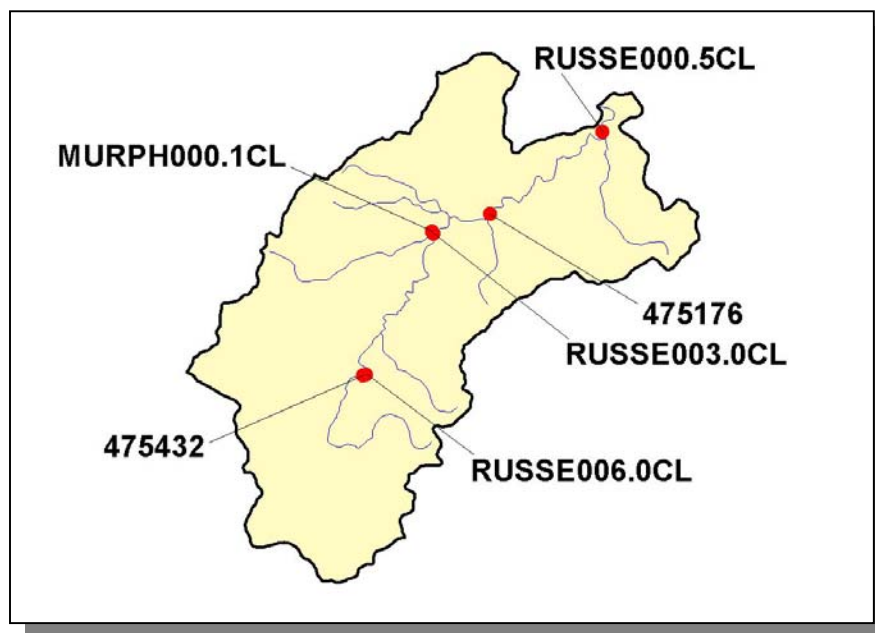
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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Claiborne	26,137	28,963	29,862	3.94	1,030	1,141	1,176	14.2

**Table 4-33. Population Estimates in Subwatershed 060102060302.**

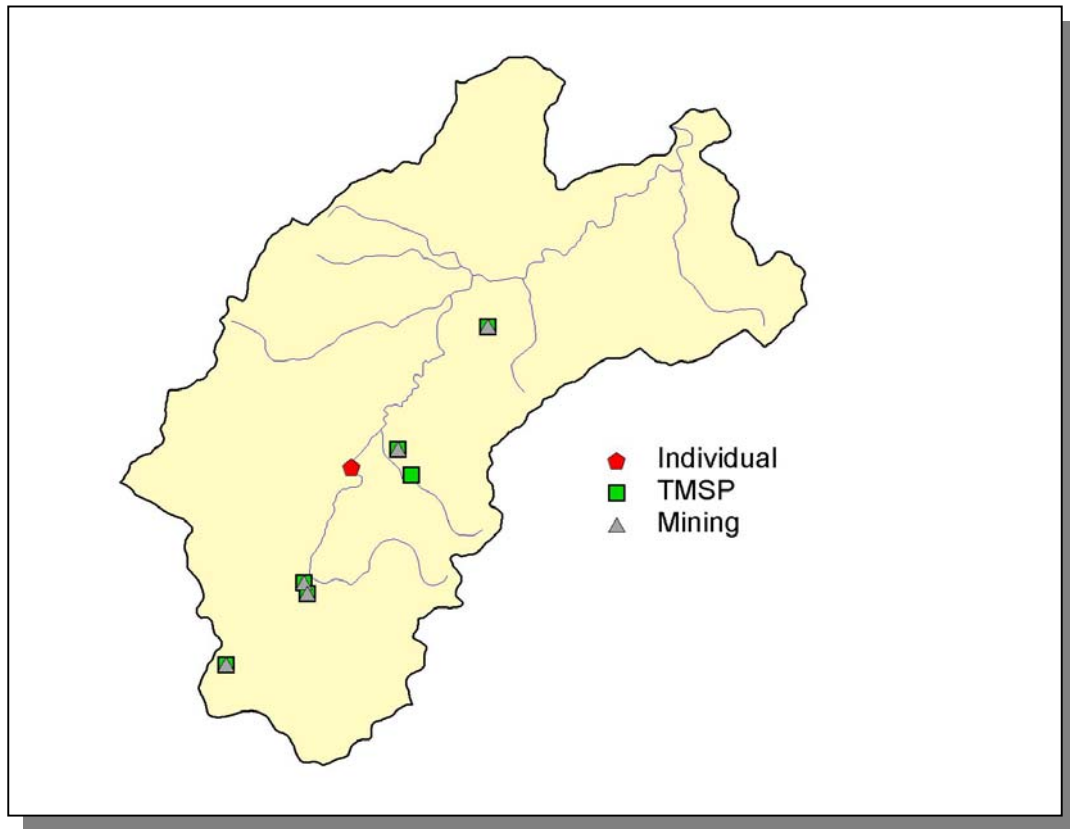
Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
New Tazewell	Claiborne	1,864	785	543	236	6
Tazewell	Claiborne	2,150	919	602	304	13
<b>Total</b>		<b>4,014</b>	<b>1,704</b>	<b>1,145</b>	<b>540</b>	<b>19</b>

**Table 4-34. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060102060302.**



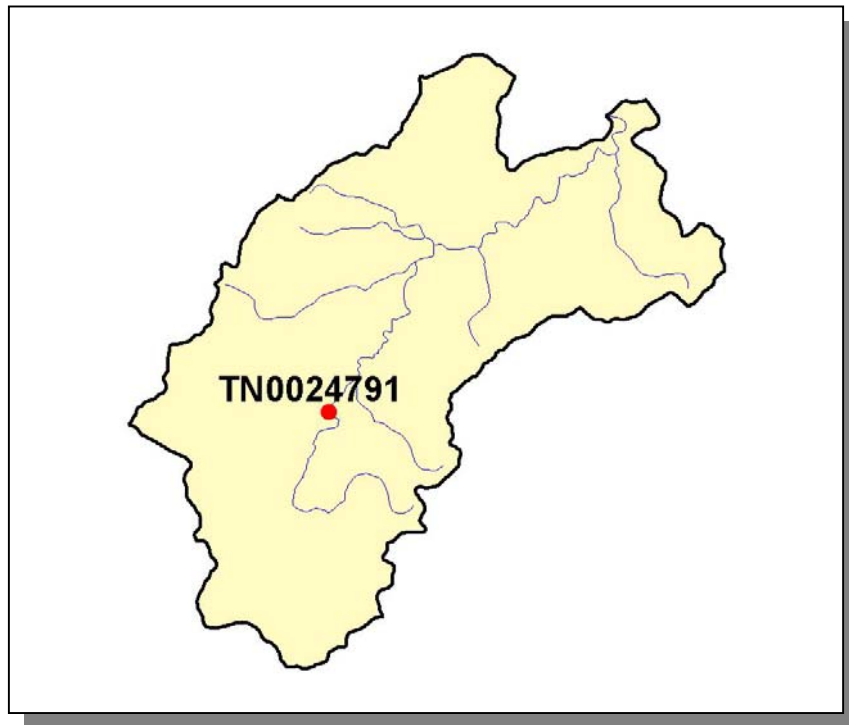
**Figure 4-31. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060102060302.** More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.

**4.2.B.ii.a. Point Source Contributions.**

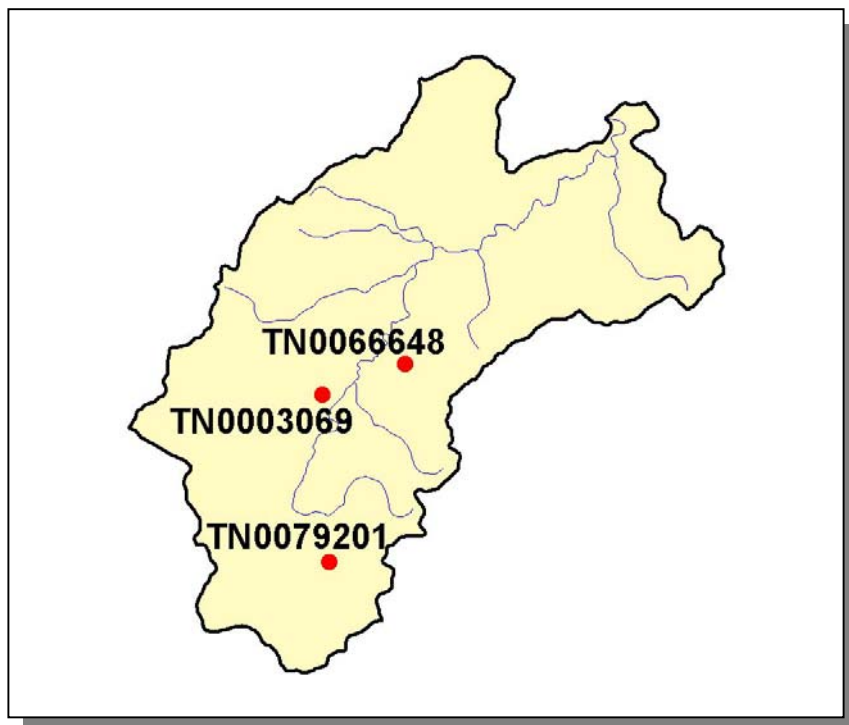


**Figure 4-32. Location of Permits Issued in Subwatershed 060102060302.** More information, including the names of facilities, is provided in Appendix IV.

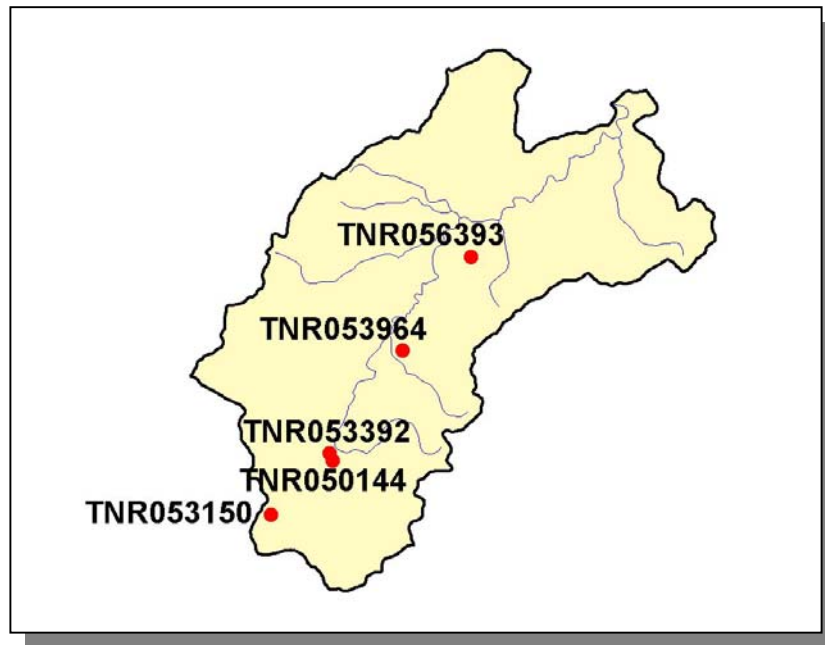




**Figure 4-33. Location of Active NPDES Sites in Subwatershed 060102060302.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-34. Location of Active Mining Sites in Subwatershed 060102060302.** More information, including the names of mining operations, is provided in Appendix IV.

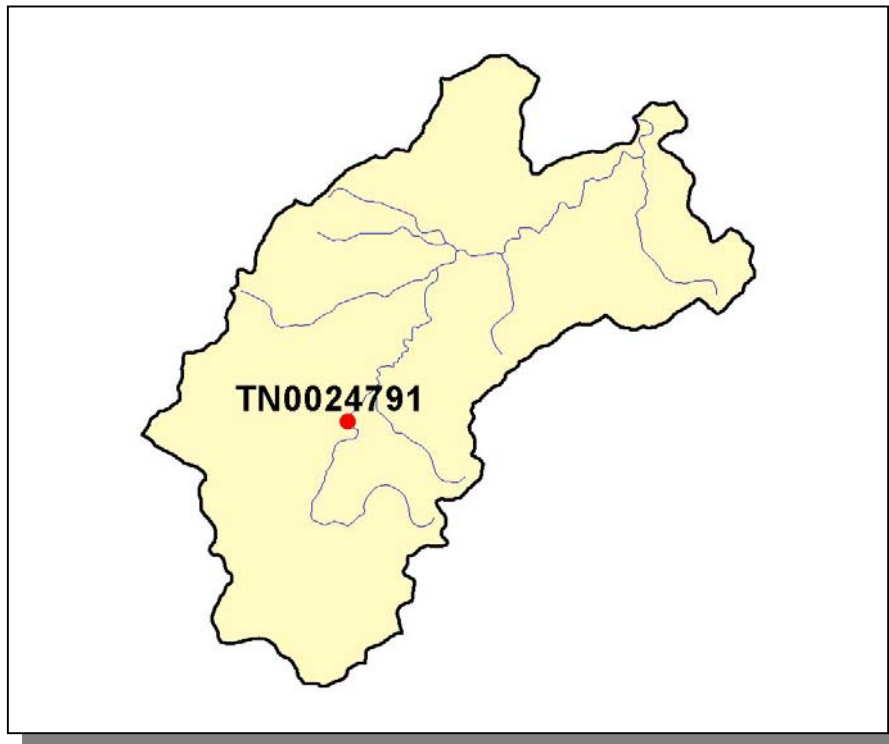


**Figure 4-35. Location of TMSP Sites in Subwatershed 060102060302.** More information, including the names of facilities, is provided in Appendix IV.

**4.2.B.ii.a.i.** Dischargers to Water Bodies Listed on the 2004 303(d) List

There is one NPDES facility discharging to water bodies listed on the 2004 303(d) list in Subwatershed 060102060302:

- TN0024791 (Claiborne County Utility District) discharges to Russell Creek @ RM 6.0



**Figure 4-36. Location of NPDES Dischargers to Water Bodies Listed on the 2004 303(d) List in Subwatershed 060102060302.** More information, including the names of facilities, is provided in Appendix IV.

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PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0024791			0.24		

**Table 4-35. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060102060302.** Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.

PERMIT #	P	NO <sub>2</sub> +NO <sub>3</sub>	N	Zn	Cu	Pb	Ni	Cd	Mo	As	FLOW
TN0024791	X	X	X	X	X	X	X	X	X	X	X

**Table 4-36. Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060102060302.**

PERMIT #	WET	CBOD <sub>5</sub>	<i>E. coli</i>	NH <sub>3</sub>	TRC	TSS	SETTLEABLE SOLIDS	CN	DO	pH
TN0024791	X	X	X	X	X	X	X	X	X	X

**Table 4-37. Inorganic Parameters Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 060102060302.** WET, Whole Effluent Toxicity; CBOD<sub>5</sub>, Carbonaceous Biochemical Oxygen Demand (5-Day); TRC, Total Residual Chlorine; TSS, Total Suspended Solids.

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**4.2.B.ii.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS				
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Sheep
1,317	2,576	76	<5	12

**Table 4-38. Summary of Livestock Count Estimates in Subwatershed 060102060302.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS					
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Sheep
Claiborne	18,697	36,566	1,082	420	165

**Table 4-39. Summary of Livestock Count Estimates in Claiborne County.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

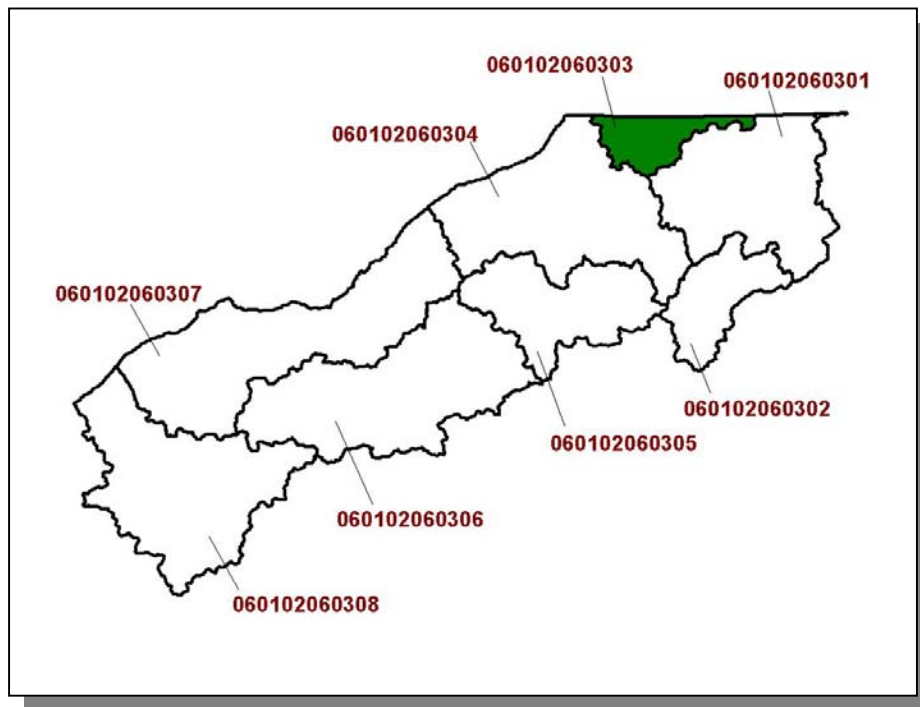
County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Claiborne	167.6	167.6	2.6	12.1

**Table 4-40. Forest Acreage and Annual Removal Rates (1987-1994) in Claiborne County.**

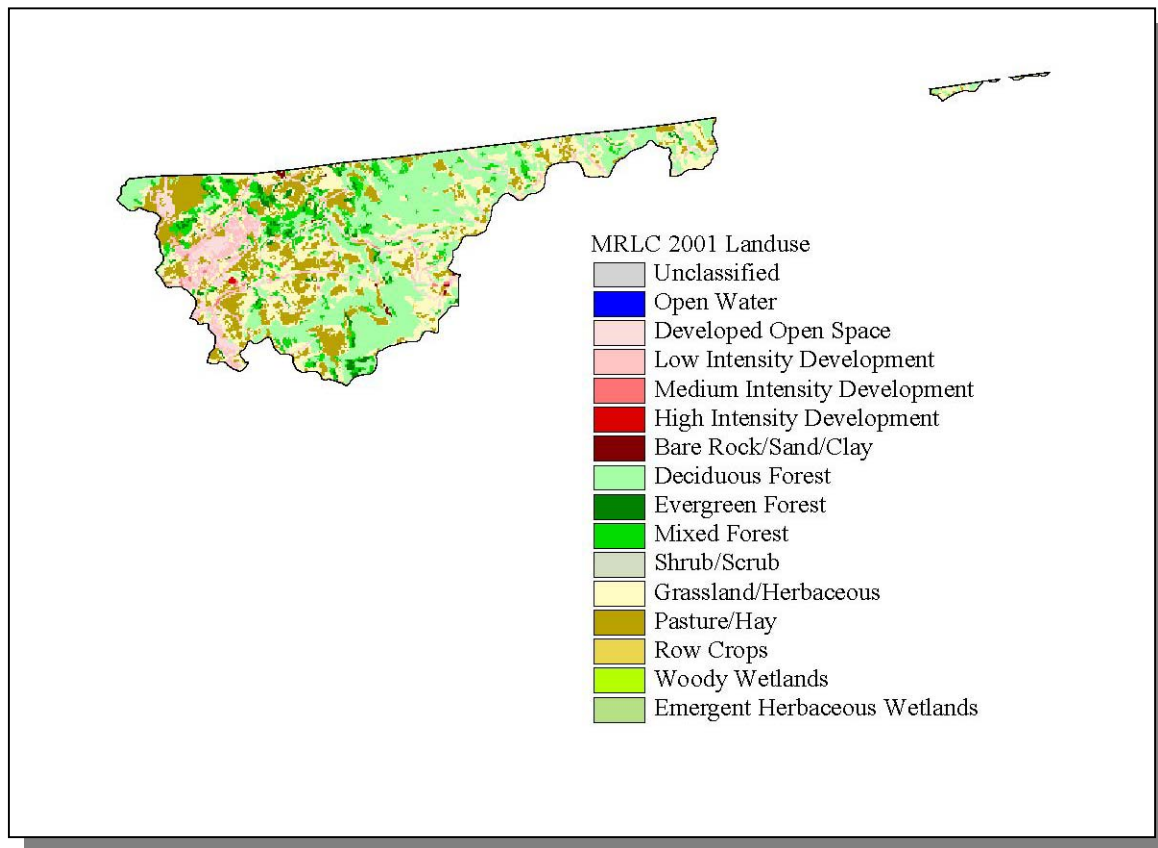
CROPS	TONS/ACRE/YEAR
Grass (Hayland)	0.38
Grass, Forbs, Legumes (Mixed Pasture)	0.13
Farmsteads and Ranch Headquarters	0.43

**Table 4-41. Annual Estimated Total Soil Loss in Subwatershed 060102060302.**

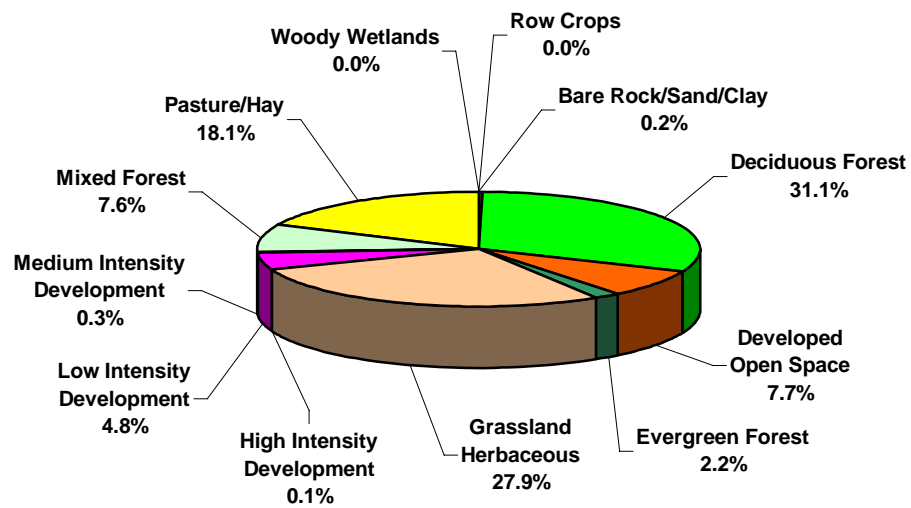
**4.2.B.iii. 060102060303 (Indian Creek).**



**Figure 4-37. Location of Subwatershed 060102060303.** All HUC-12 subwatershed boundaries are shown for reference.

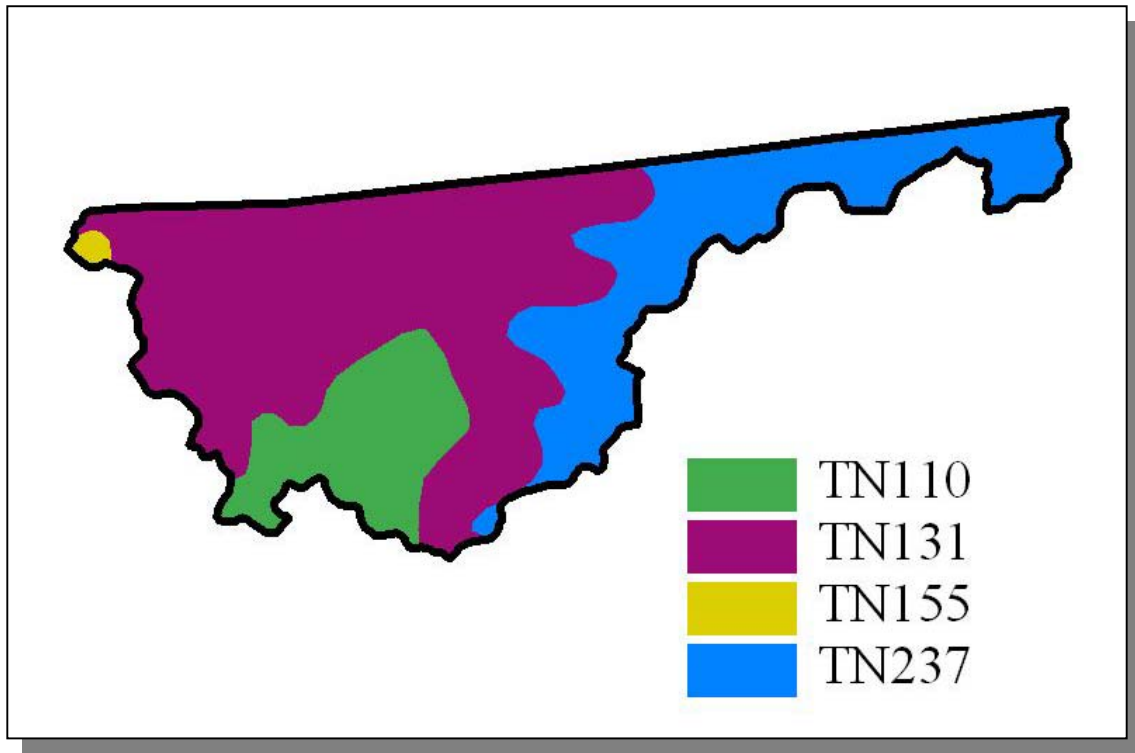


**Figure 4-38. Illustration of Land Use Distribution in Subwatershed 060102060303.**



**Figure 4-39. Land Use Distribution in Subwatershed 060102060303.** More information is provided in Appendix IV.





**Figure 4-40. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060303.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN155	0.00	C	1.71	5.31	Loam	0.32
TN237	0.00	B	3.36	5.40	Silty Loam	0.32

**Table 4-42. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060303.** The definition of "Hydrologic Group" is provided in Appendix IV.

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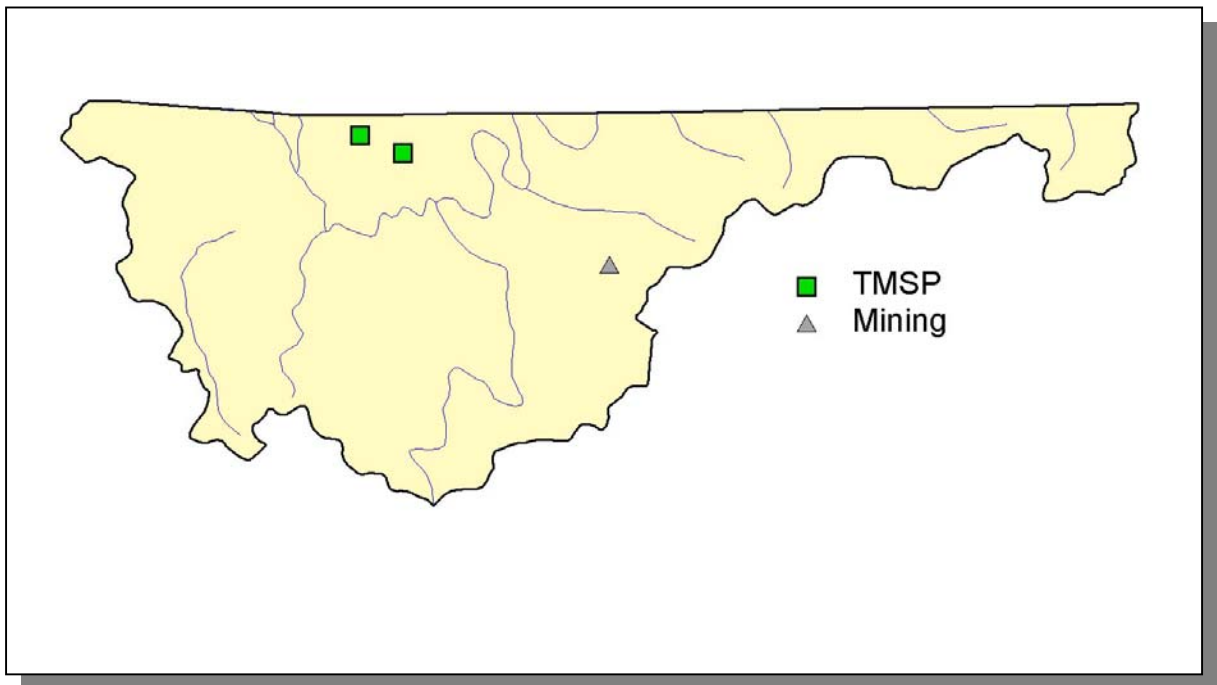
County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Claiborne	26,137	28,963	29,862	2.35	614	680	702	14.3

**Table 4-43. Population Estimates in Subwatershed 060102060303.**

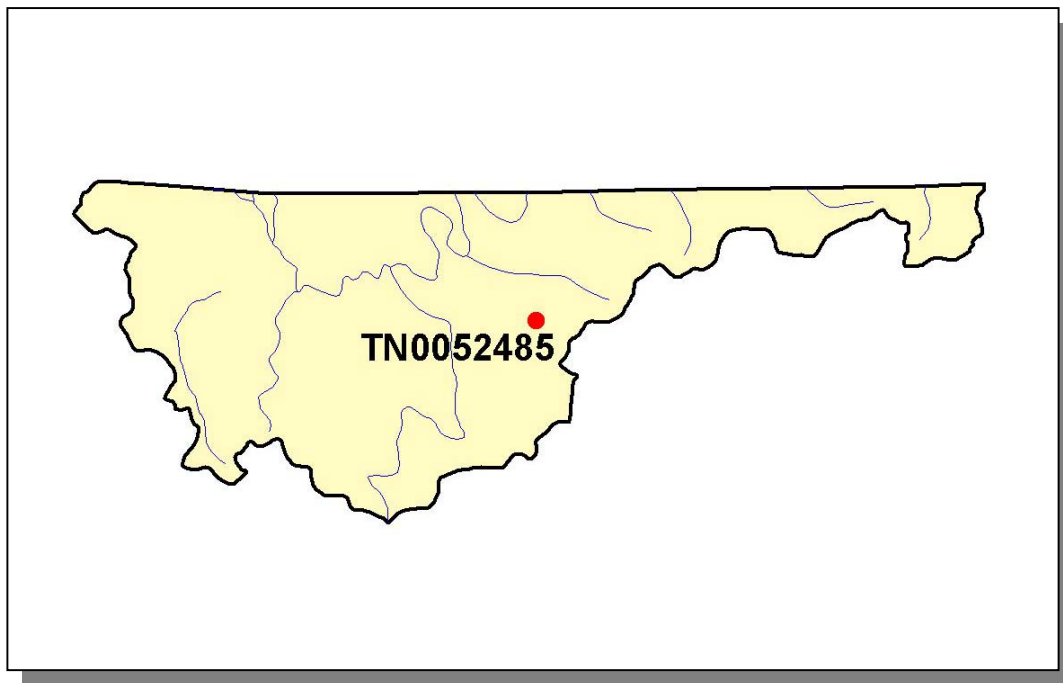


**Figure 4-41. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060102060303.** More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.

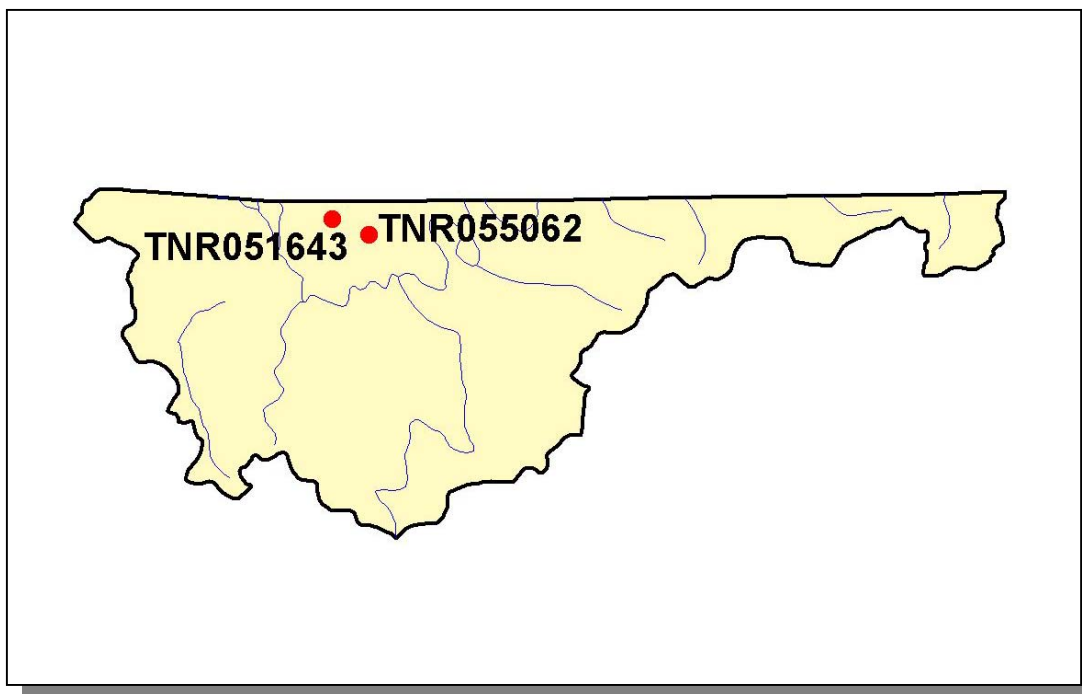
**4.2.B.iii.a. Point Source Contributions.**



**Figure 4-42. Location of Permits Issued in Subwatershed 060102060303.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-43. Location of Active Mining Sites in Subwatershed 060102060303.** More information, including the names of mining operations, is provided in Appendix IV.



**Figure 4-44. Location of TMSP Sites in Subwatershed 060102060303.** More information, including the names of facilities, is provided in Appendix IV.

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**4.2.B.iii.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS				
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Sheep
596	1,165	34	<5	5

**Table 4-44. Summary of Livestock Count Estimates in Subwatershed 060102060303.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS					
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Sheep
Claiborne	18,697	36,566	1,082	420	165

**Table 4-45. Summary of Livestock Count Estimates in Claiborne County.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

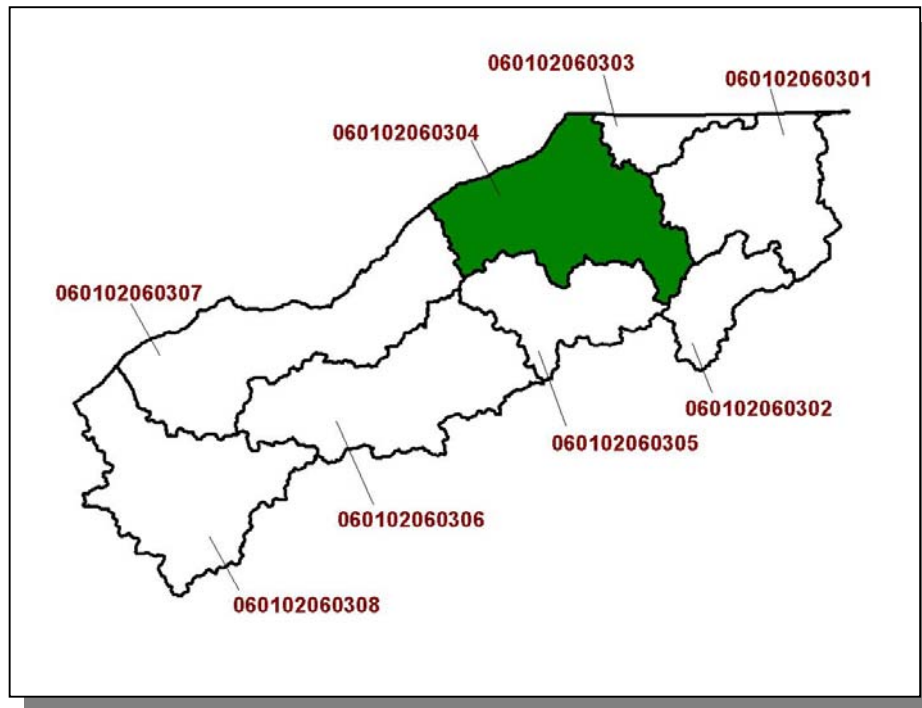
County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Claiborne	167.6	167.6	2.6	12.1

**Table 4-46. Forest Acreage and Annual Removal Rates (1987-1994) in Claiborne County.**

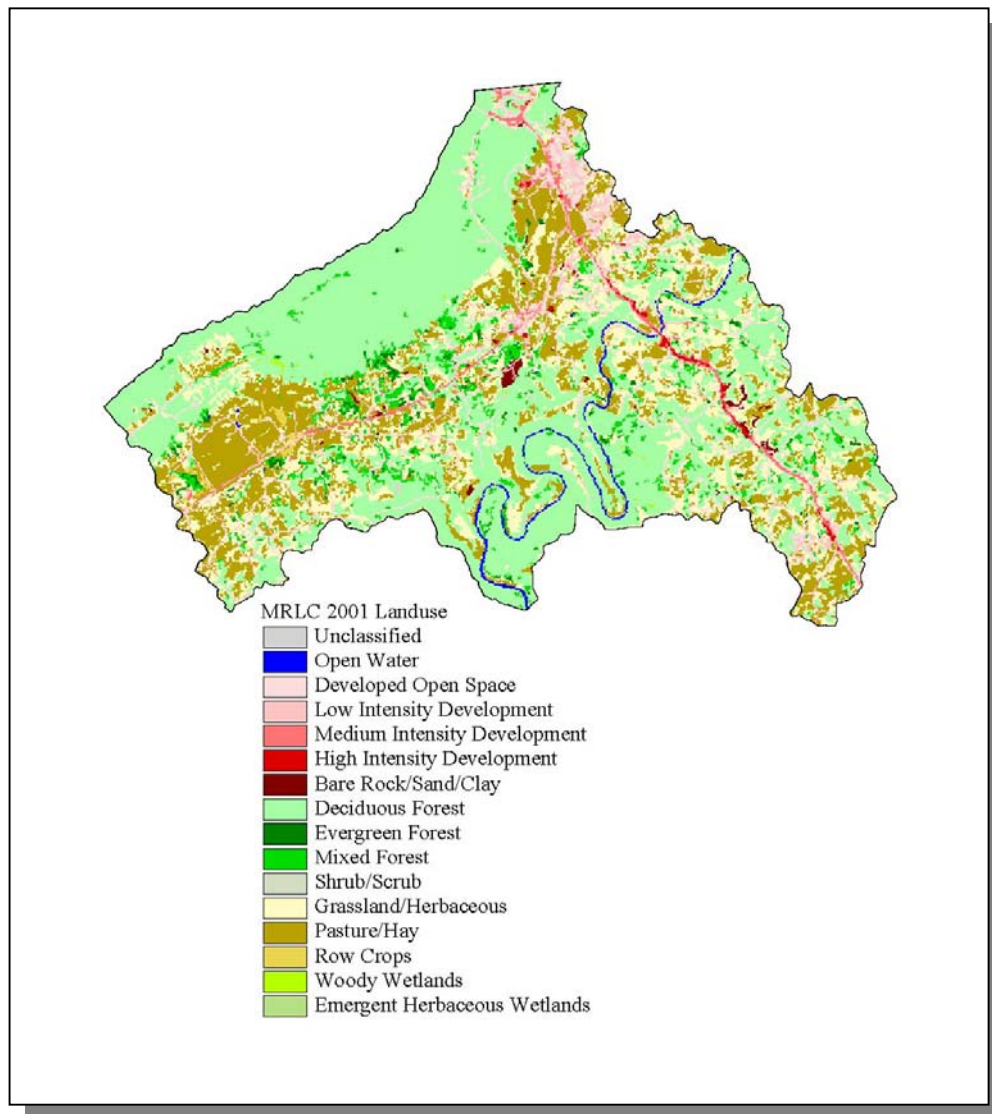
CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.38
Grass, Forbs, Legumes (Mixed Pasture)	0.13
Farmsteads and Ranch Headquarters	0.43

**Table 4-47. Annual Estimated Total Soil Loss in Subwatershed 060102060303.**

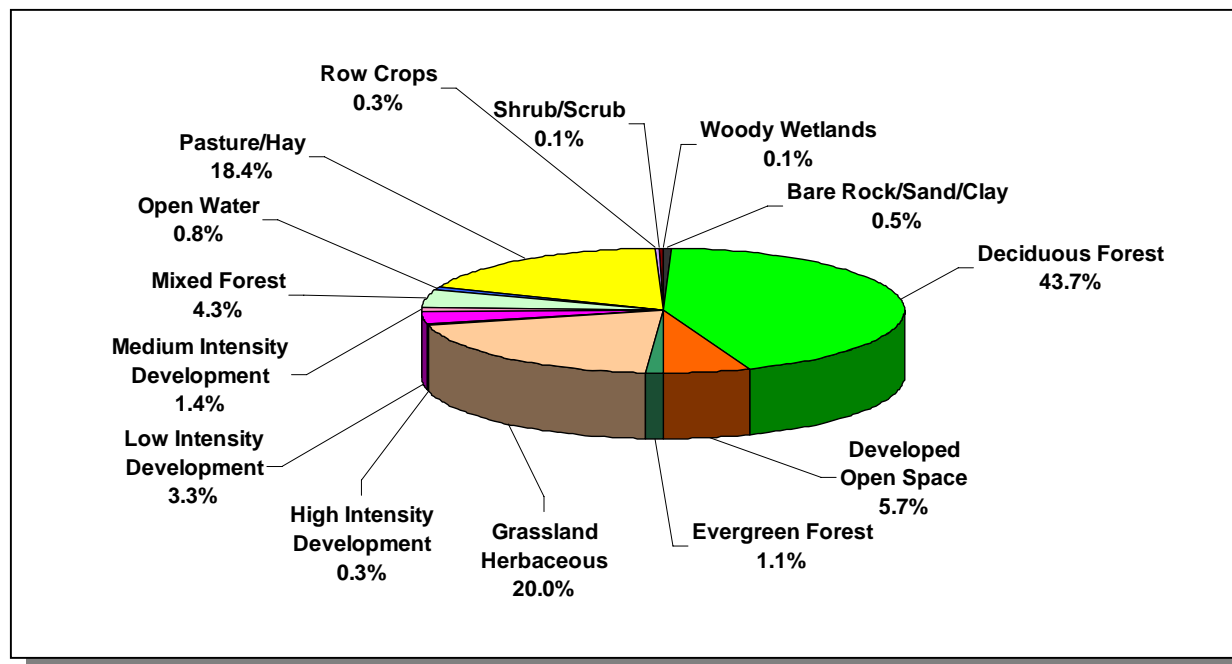
**4.2.B.iv. 060102060304 (Powell River).**



**Figure 4-45. Location of Subwatershed 060102060304.** All HUC-12 subwatershed boundaries are shown for reference.



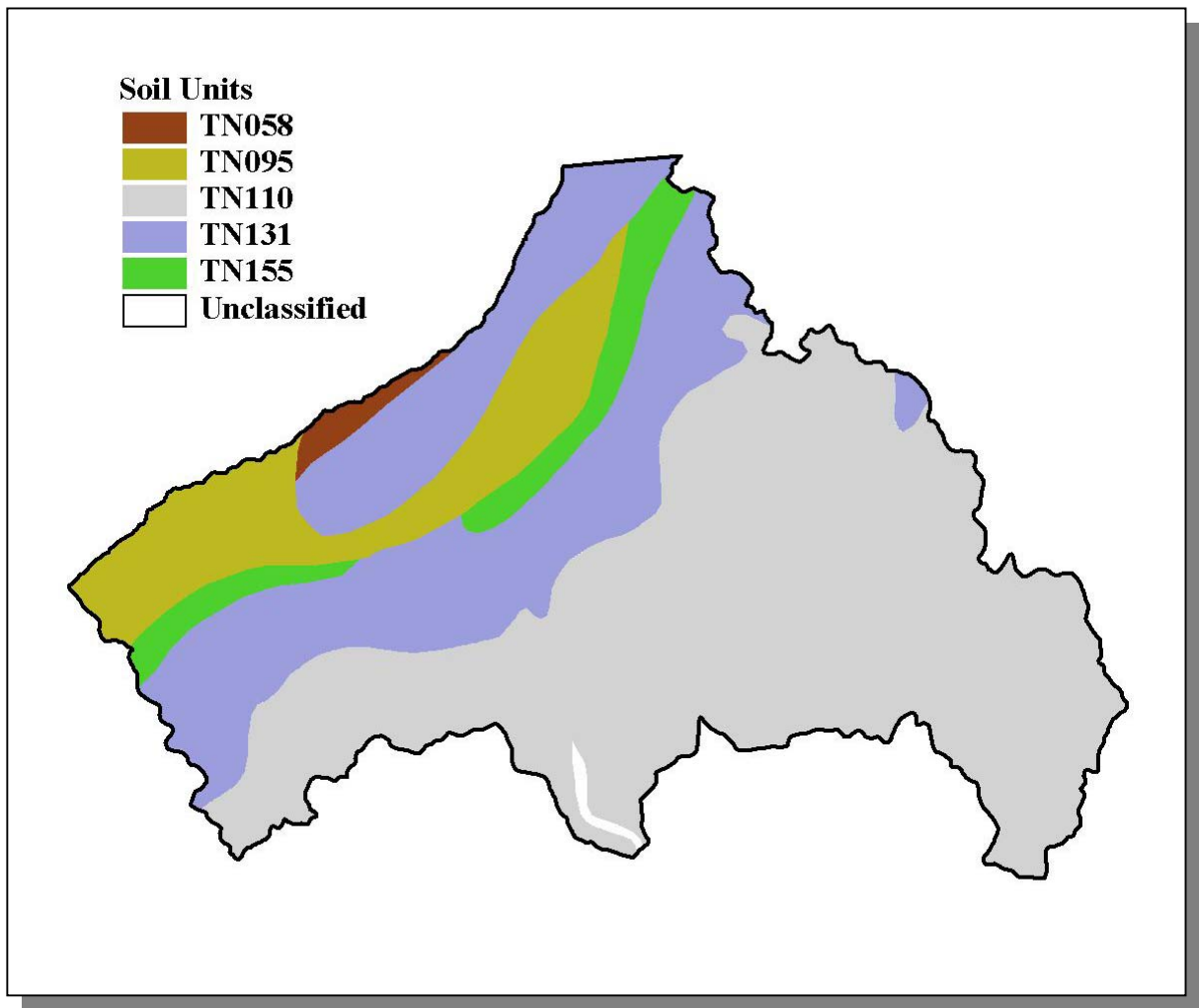
**Figure 4-46. Illustration of Land Use Distribution in Subwatershed 060102060304.**



*Figure 4-47. Land Use Distribution in Subwatershed 060102060304. More information is provided in Appendix IV.*



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**Figure 4-48. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060304.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN058	0.00	B	4.50	5.00	Loam	0.25
TN095	0.00	B	2.35	5.12	Loam	0.31
TN110	0.00	B	2.22	4.96	Loam	0.31
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN155	0.00	C	1.71	5.31	Loam	0.32

**Table 4-48. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060304.** The definition of "Hydrologic Group" is provided in Appendix IV.

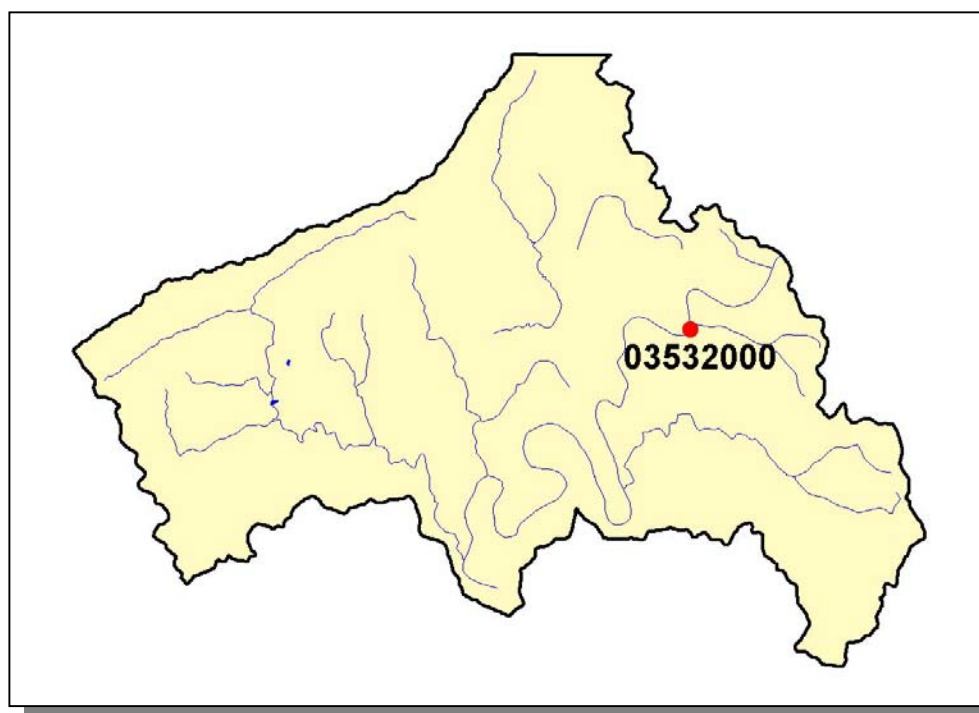
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County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Claiborne	26,137	28,963	29,862	12.17	3,180	3,524	3,633	14.2

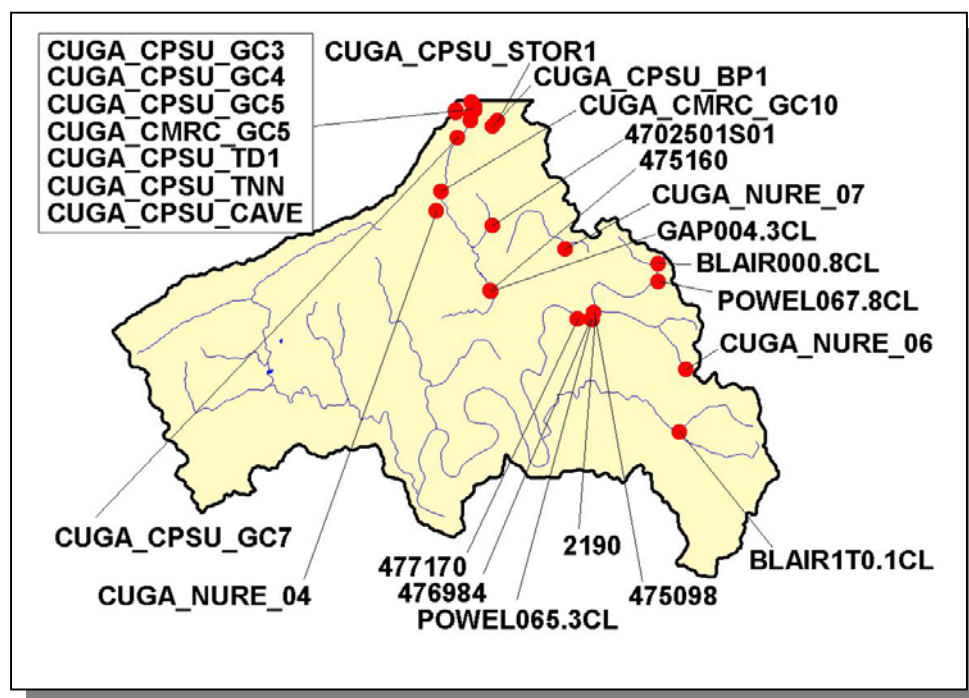
**Table 4-49. Population Estimates in Subwatershed 060102060304.**

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Cumberland Gap	Claiborne	211	114	107	2	5
Tazewell	Claiborne	2,150	919	602	304	13
<b>Total</b>		<b>2,361</b>	<b>1,033</b>	<b>709</b>	<b>306</b>	<b>18</b>

**Table 4-50. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 060102060304.**

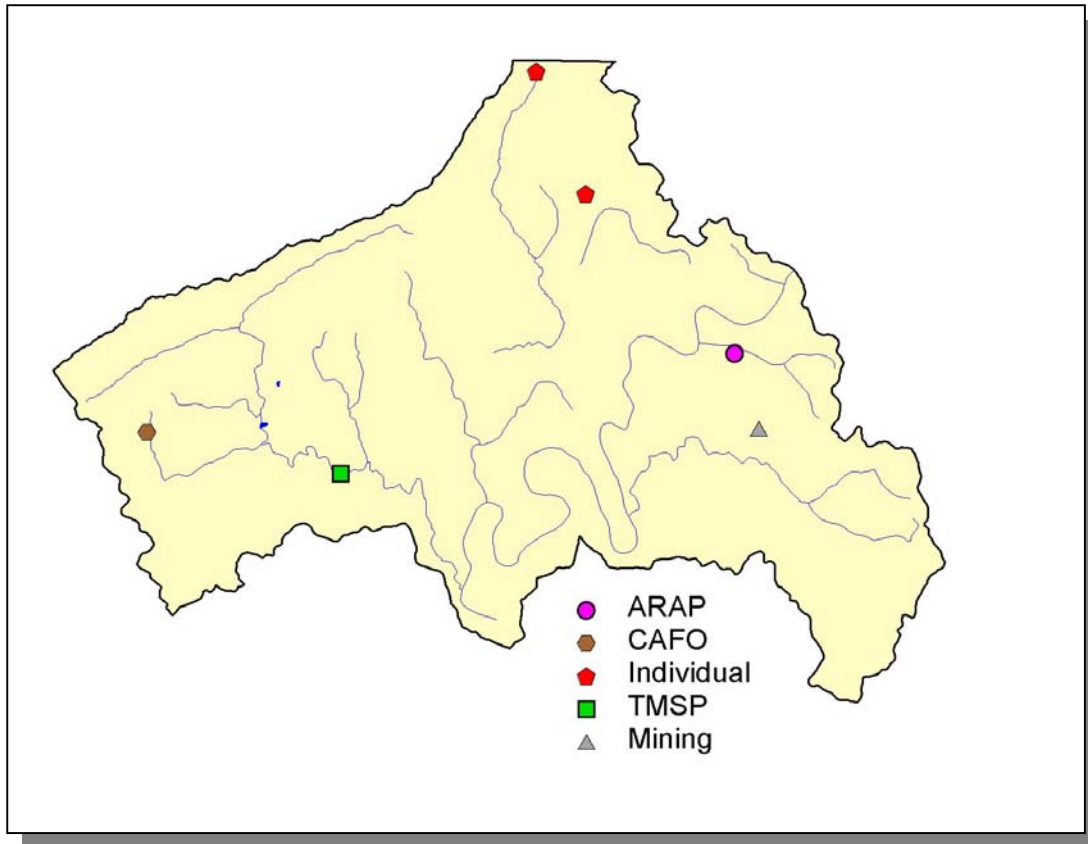


**Figure 4-49. Location of Historical Streamflow Data Collection Sites in Subwatershed 060102060304.** More information is provided in Appendix IV.

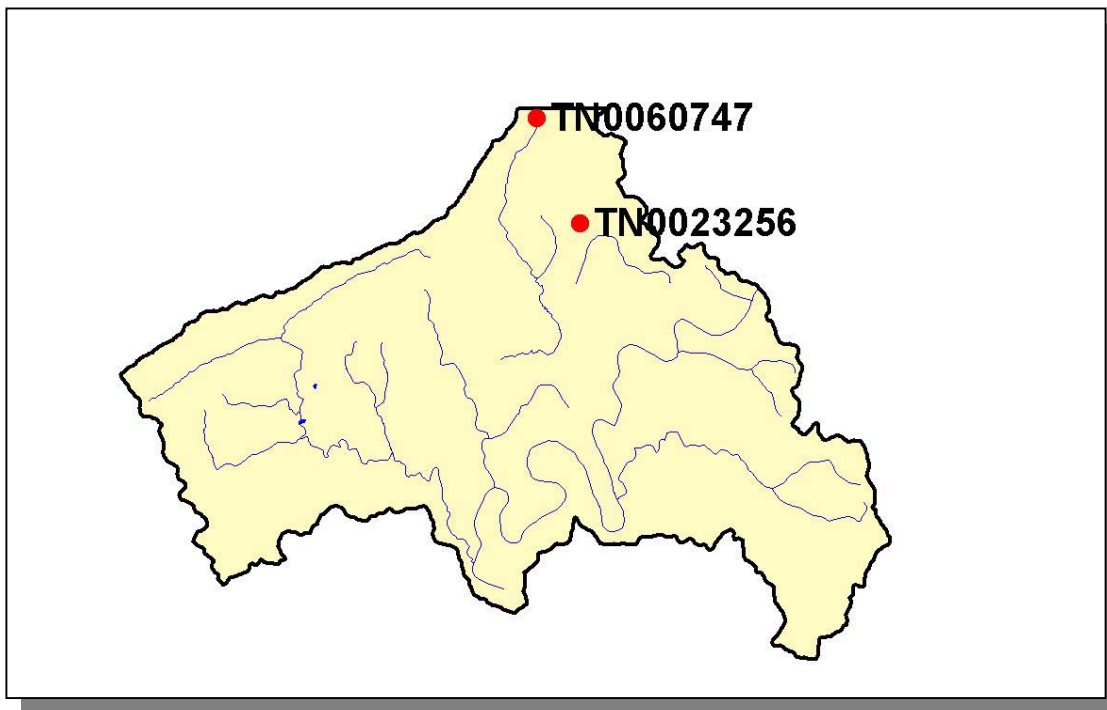


**Figure 4-50. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060102060304.** More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.

**4.2.B.iv.a. Point Source Contributions.**



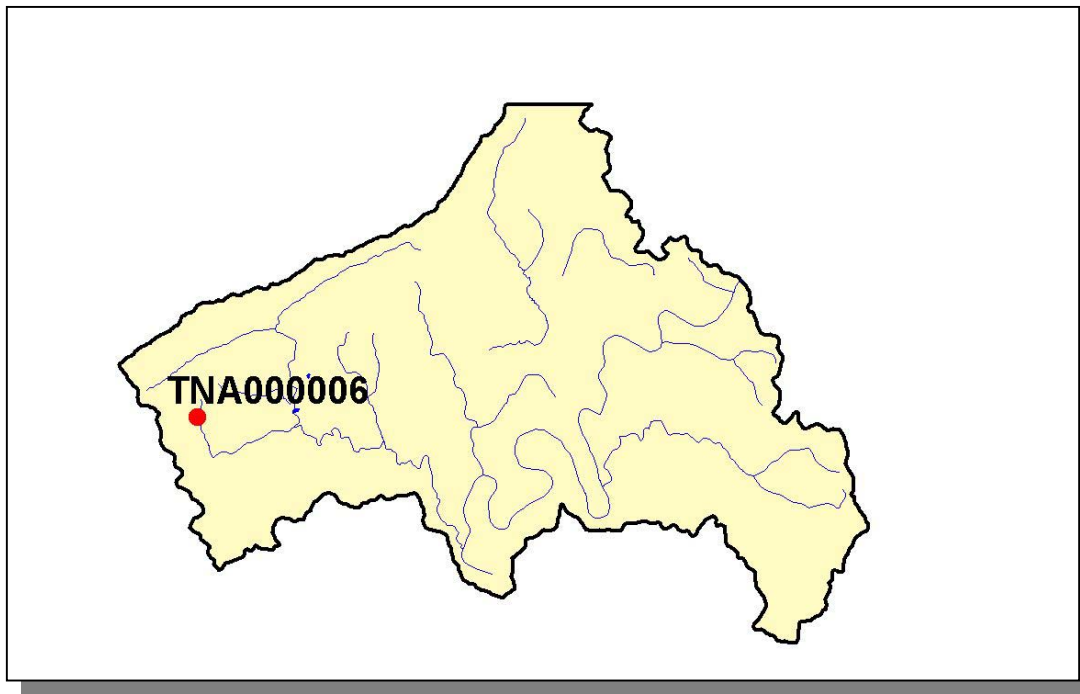
**Figure 4-51. Location of Permits Issued in Subwatershed 060102060304.** More information, including the names of facilities, is provided in Appendix IV.



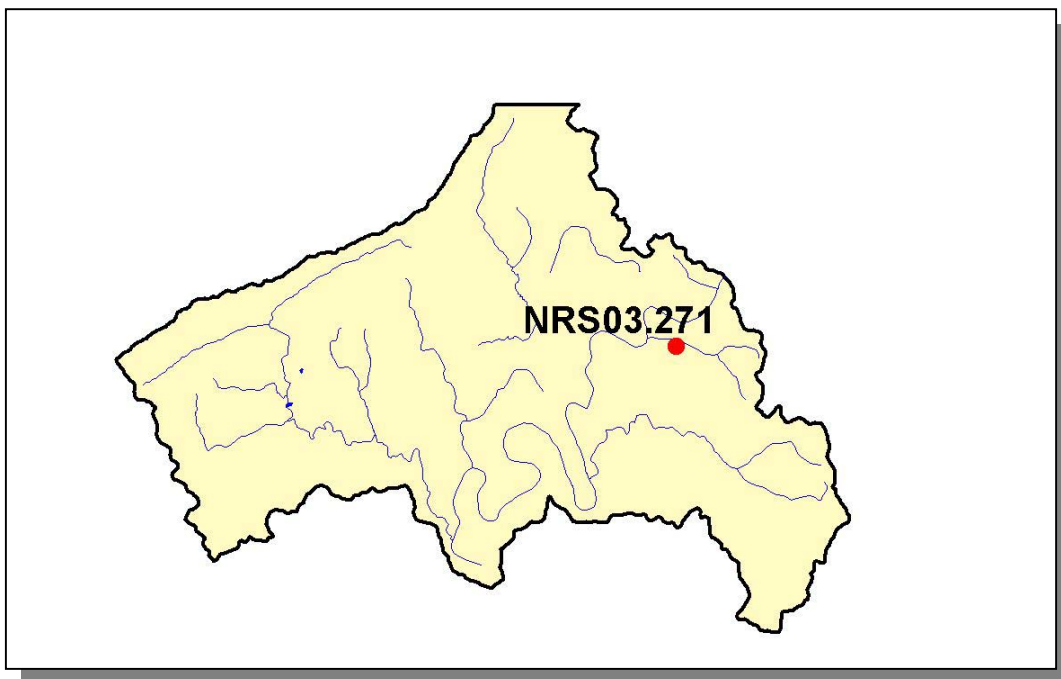
**Figure 4-52. Location of Active NPDES Sites in Subwatershed 060102060304.** More information, including the names of facilities, is provided in Appendix IV.



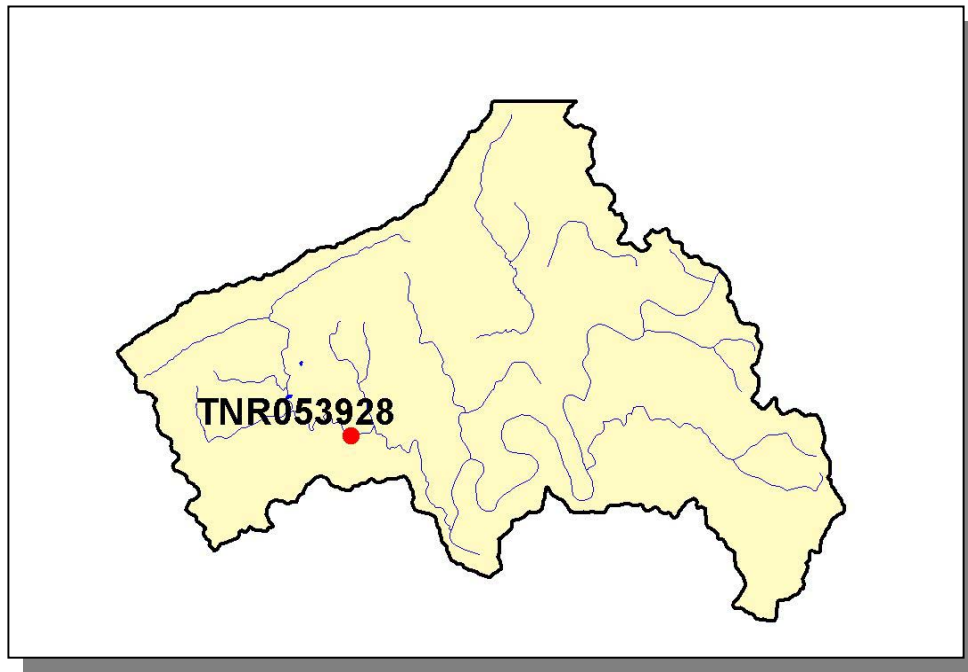
**Figure 4-53. Location of Active Mining Sites in Subwatershed 060102060304.** More information, including the names of mining operations, is provided in Appendix IV.



**Figure 4-54. Location of Concentrated Animal Feeding Operation Sites in Subwatershed 060102060304.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-55. Location of Aquatic Resource Alteration Permit (ARAP) Sites (Individual Permits) in Subwatershed 060102060304.** More information is provided in Appendix IV.



**Figure 4-56. Location of TMSF Sites in Subwatershed 060102060304.** More information, including the names of facilities, is provided in Appendix IV.

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**4.2.B.iv.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS				
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Sheep
3,049	5,964	176	5	27

**Table 4-51. Summary of Livestock Count Estimates in Subwatershed 060102060304.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS					
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Sheep
Claiborne	18,697	36,566	1,082	420	165

**Table 4-52. Summary of Livestock Count Estimates in Claiborne County.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Claiborne	167.6	167.6	2.6	12.1

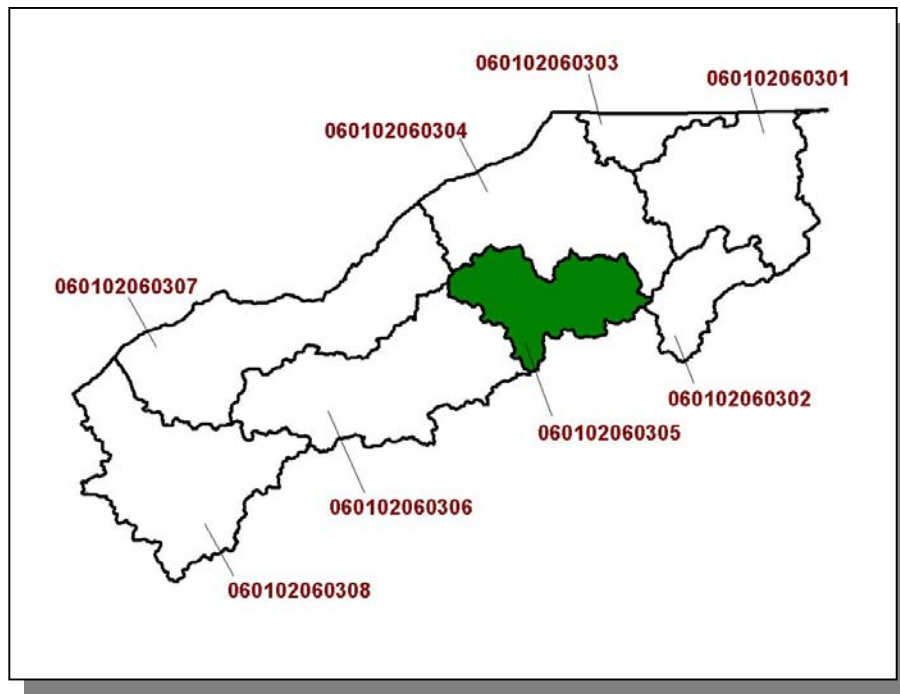
**Table 4-53. Forest Acreage and Annual Removal Rates (1987-1994) in Claiborne County.**

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.38
Grass, Forbs, Legumes (Mixed Pasture)	0.13
Farmsteads and Ranch Headquarters	0.43

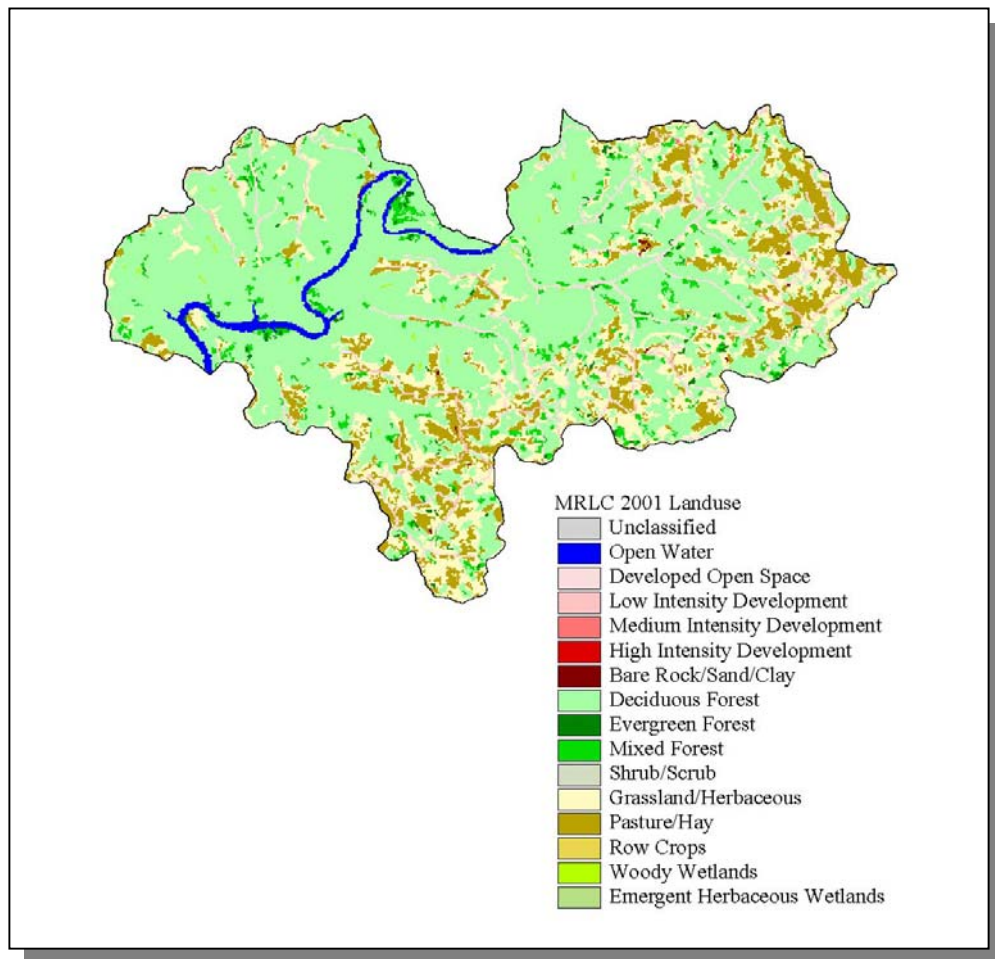
**Table 4-54. Annual Estimated Total Soil Loss in Subwatershed 060102060304.**



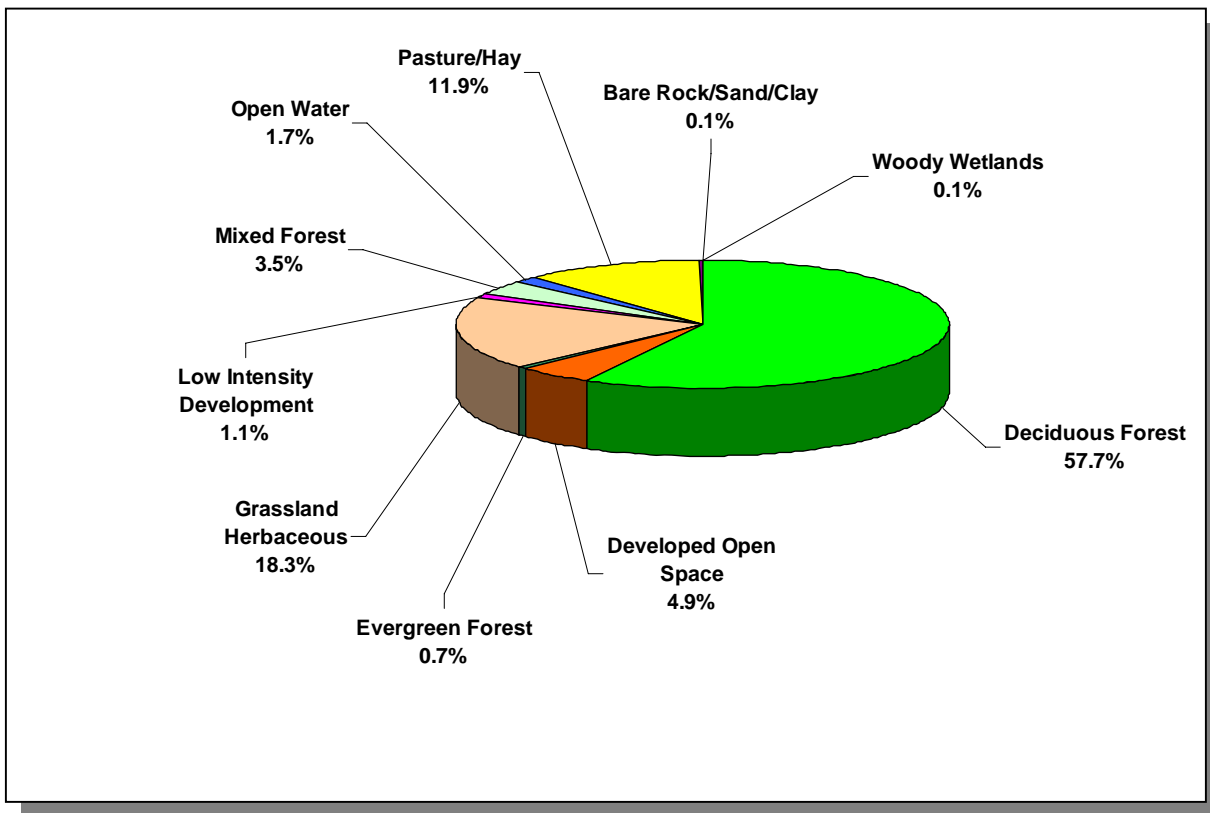
**4.2.B.v.** 060102060305 (Upper Norris Lake).



**Figure 4-57. Location of Subwatershed 060102060305.** All HUC-12 subwatershed boundaries are shown for reference.

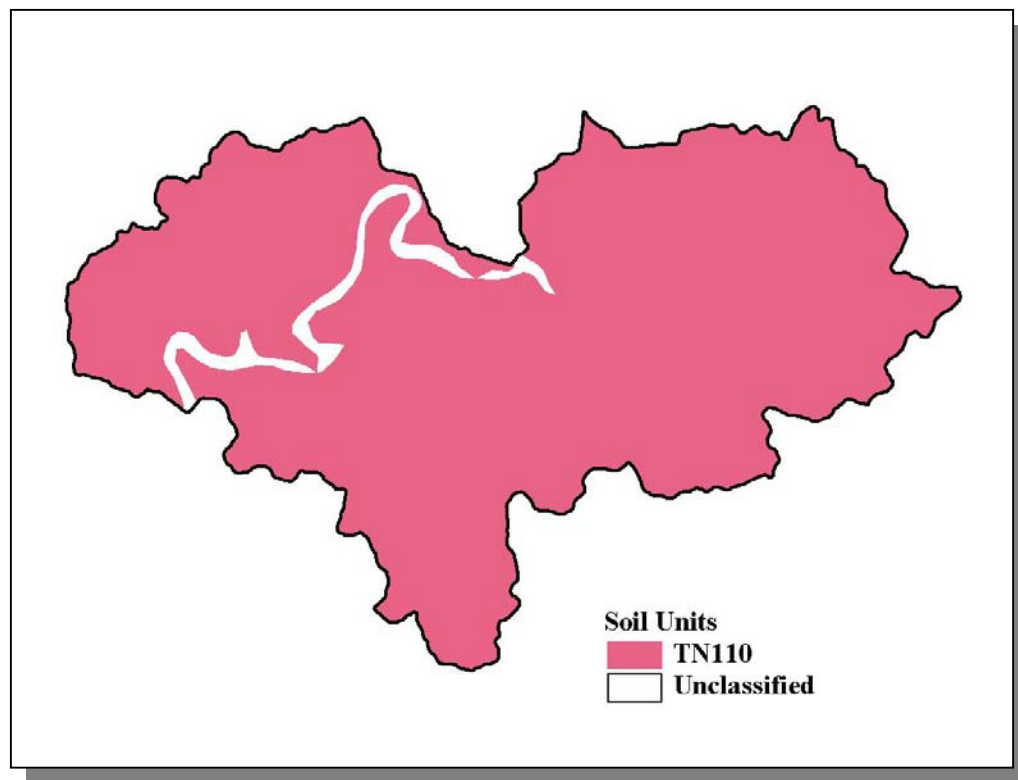


**Figure 4-58. Illustration of Land Use Distribution in Subwatershed 060102060305.**



**Figure 4-59. Land Use Distribution in Subwatershed 060102060305.** More information is provided in Appendix IV.

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**Figure 4-60. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060305.**

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31

**Table 4-55. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060305.** The definition of "Hydrologic Group" is provided in Appendix IV.

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Claiborne	26,137	28,963	29,862	6.79	1,775	1,967	2,028	14.3

**Table 4-56. Population Estimates in Subwatershed 060102060305.**

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**4.2.B.v.a. Point Source Contributions.**

There are no point source contributions in this subwatershed.

**4.2.B.v.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS				
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Sheep
1,099	2,150	64	<5	10

**Table 4-57. Summary of Livestock Count Estimates in Subwatershed 060102060305.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Claiborne	18,697	36,566	1,082	420		165

**Table 4-58. Summary of Livestock Count Estimates in Claiborne County.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

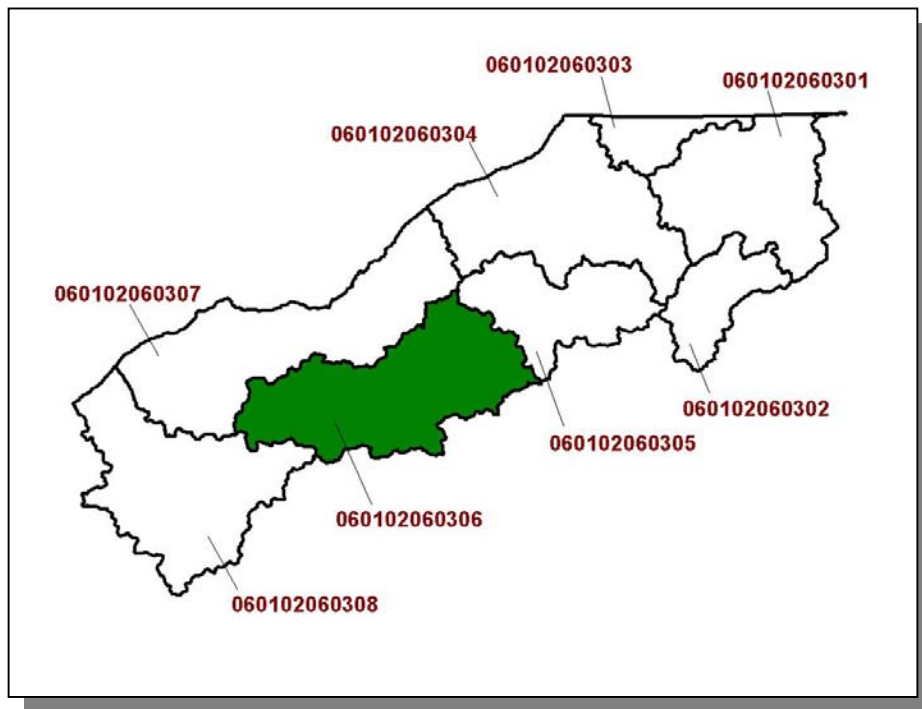
County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Claiborne	167.6	167.6	2.6	12.1

**Table 4-59. Forest Acreage and Annual Removal Rates (1987-1994) in Claiborne County.**

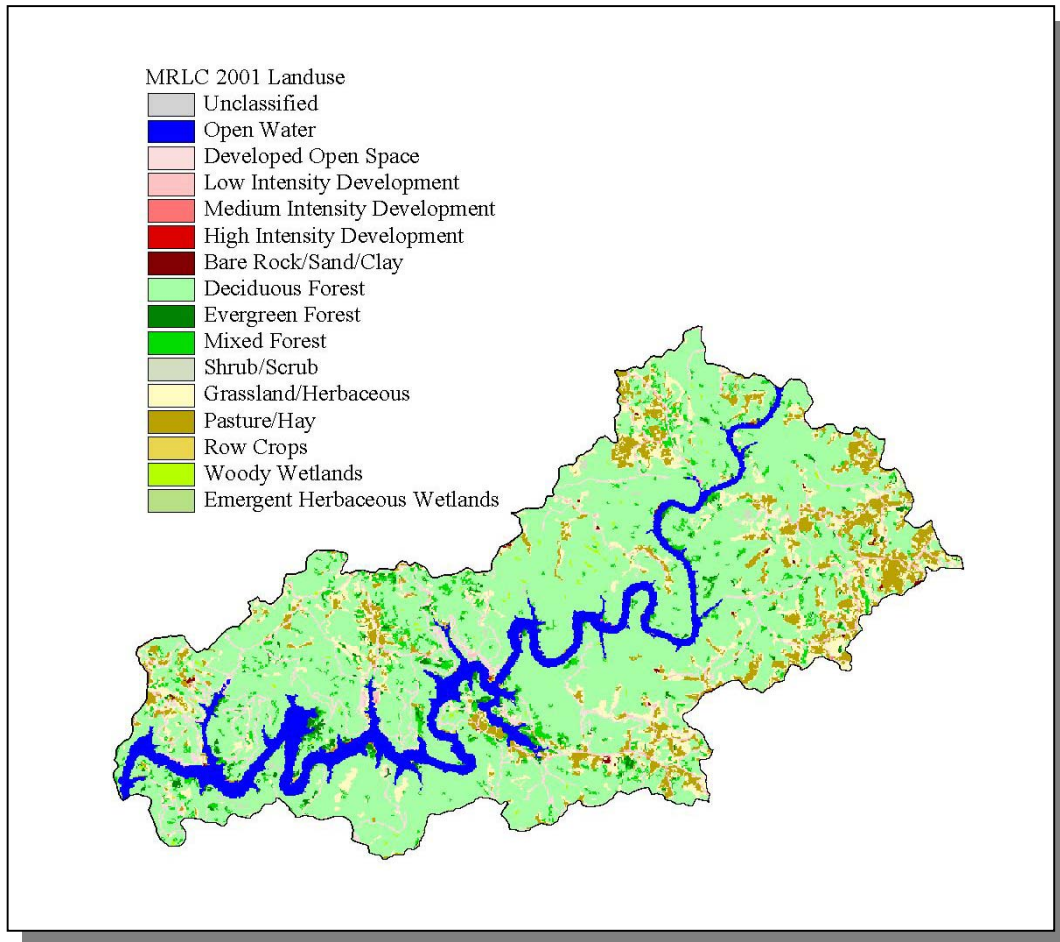
CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.38
Grass, Forbs, Legumes (Mixed Pasture)	0.13
Farmsteads and Ranch Headquarters	0.43

**Table 4-60. Annual Estimated Total Soil Loss in Subwatershed 060102060305.**

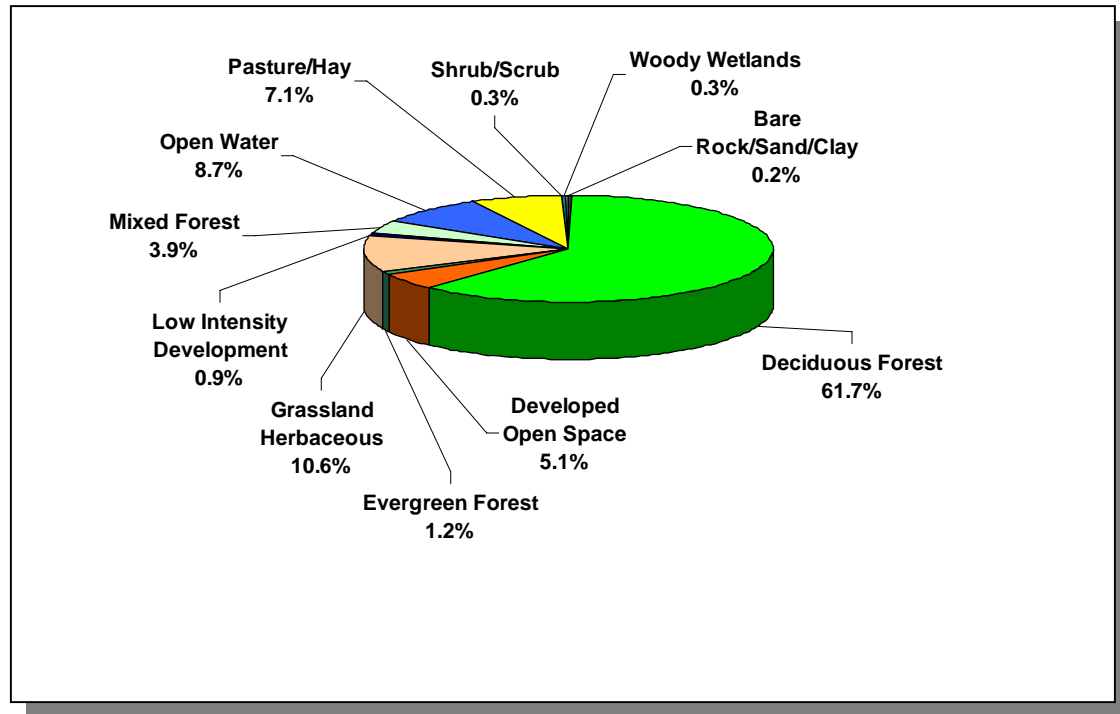
**4.2.B.vi. 060102060306 (Middle Norris Lake).**



**Figure 4-61. Location of Subwatershed 060102060306.** All HUC-12 subwatershed boundaries are shown for reference.

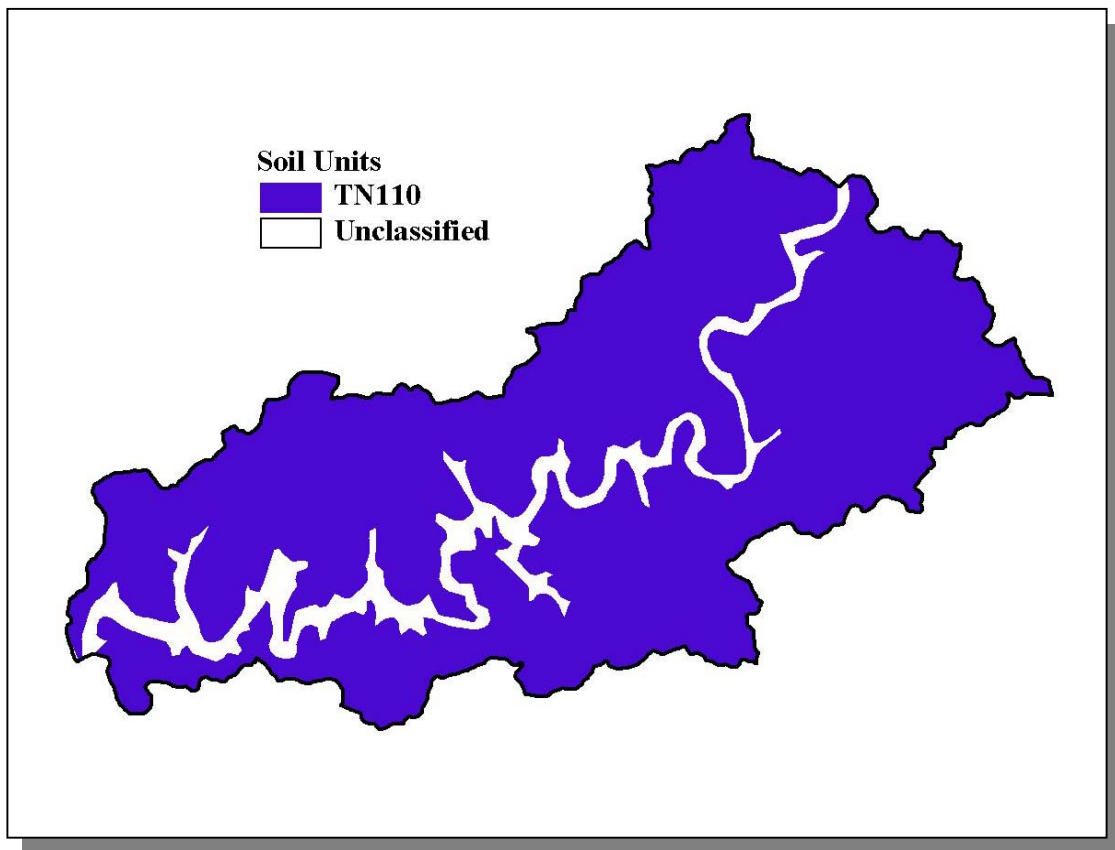


**Figure 4-62. Illustration of Land Use Distribution in Subwatershed 060102060306.**



**Figure 4-63. Land Use Distribution in Subwatershed 060102060306.** More information is provided in Appendix IV.





**Figure 4-64. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060306.**

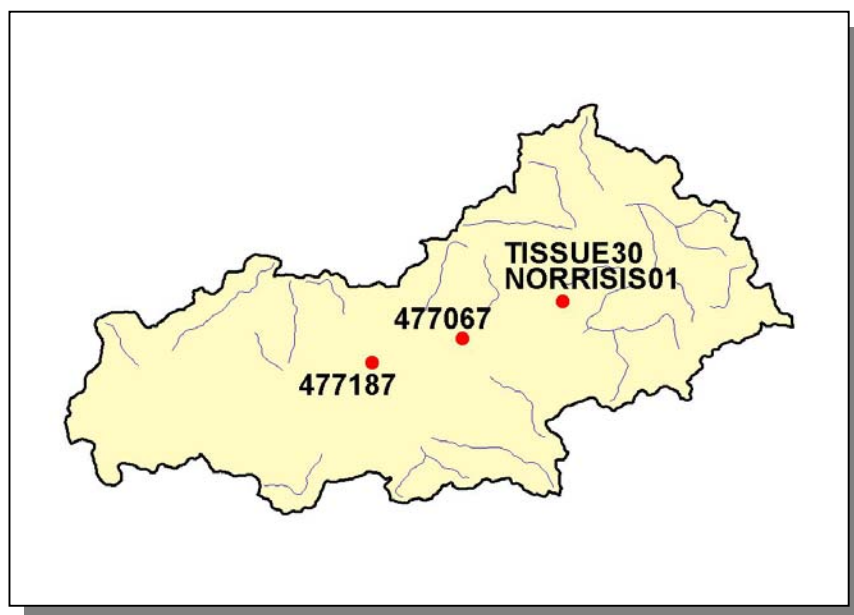
STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN110	0.00	B	2.22	4.96	Loam	0.31

**Table 4-61. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060306.** The definition of "Hydrologic Group" is provided in Appendix IV.

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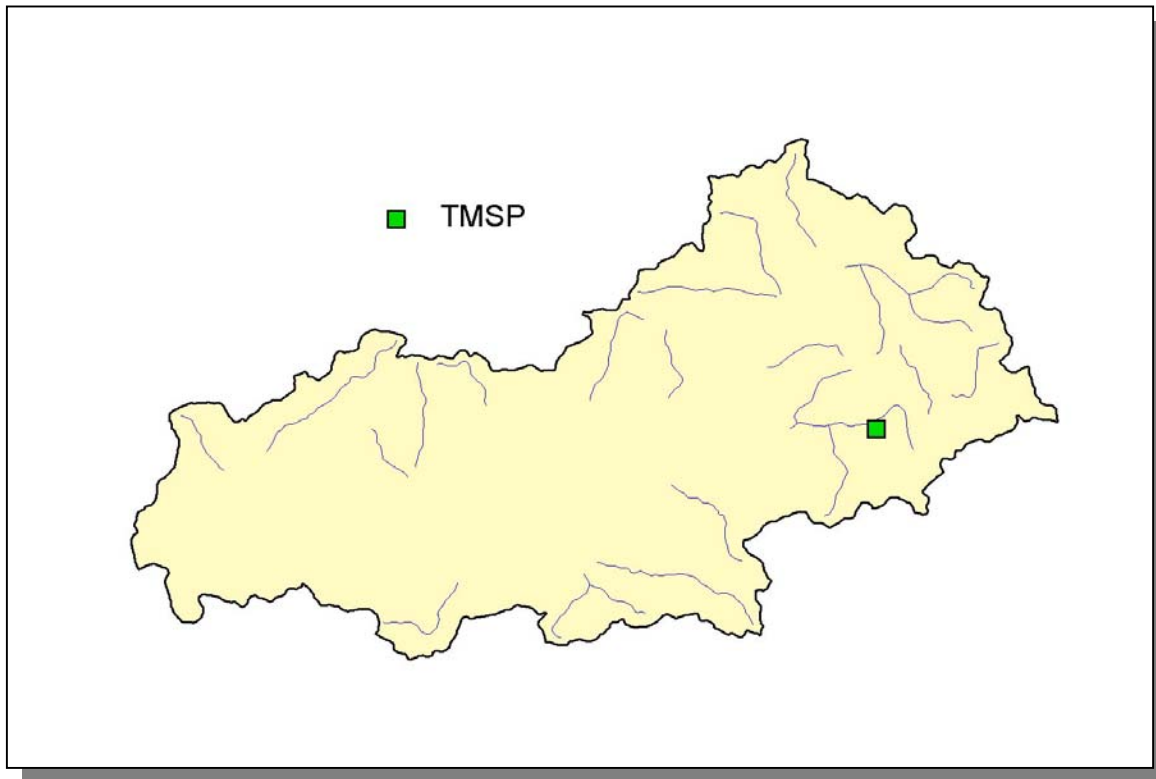
County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Campbell	35,079	37,878	39,854	1.19	416	449	473	13.7
Claiborne	26,137	28,963	29,862	5.71	1,492	1,653	1,705	14.3
Union	13,694	15,956	17,808	11.02	1,510	1,759	1,963	30.0
<b>Total</b>	<b>74,910</b>	<b>82,797</b>	<b>87,524</b>		<b>3,418</b>	<b>3,861</b>	<b>4,141</b>	<b>21.2</b>

*Table 4-62. Population Estimates in Subwatershed 060102060306.*

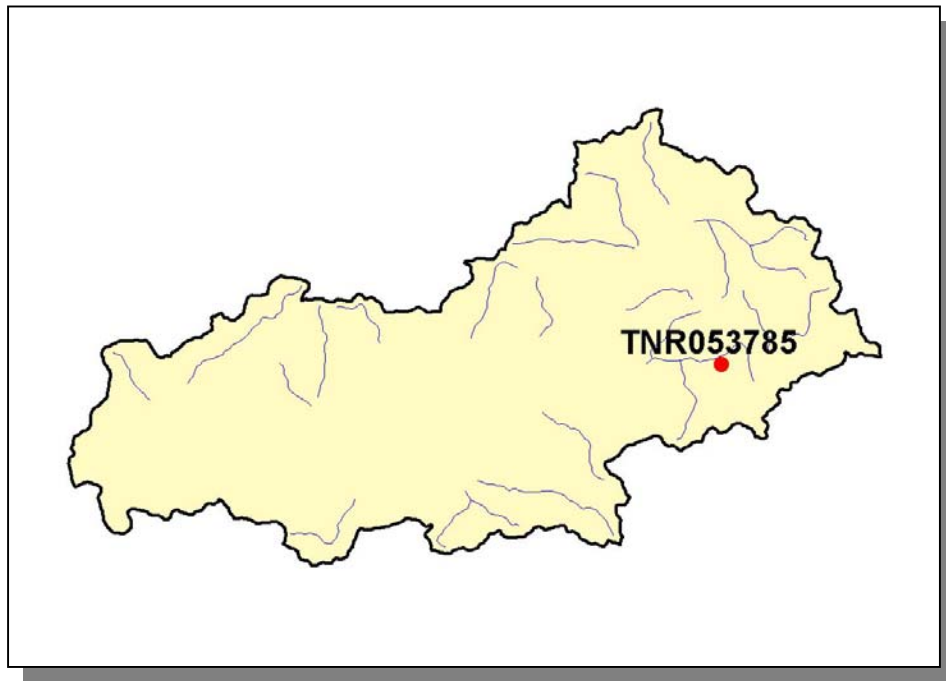


*Figure 4-65. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060102060306. More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.*

**4.2.B.vi.a. Point Source Contributions.**



**Figure 4-66. Location of Permits Issued in Subwatershed 060102060306.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-67. Location of TMS Sites in Subwatershed 060102060306.** More information, including the names of facilities, is provided in Appendix IV.

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**4.2.B.vi.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
1,083	2,102	61	<5	<5	11

**Table 4-63. Summary of Livestock Count Estimates in Subwatershed 060102060306.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Campbell	4,083	7,684	66	8	14	0
Claiborne	18,697	36,566	1,082	420	0	165
Union	5,540	10,575	105	981	93	96

**Table 4-64. Summary of Livestock Count Estimates in Campbell, Claiborne and Union Counties.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

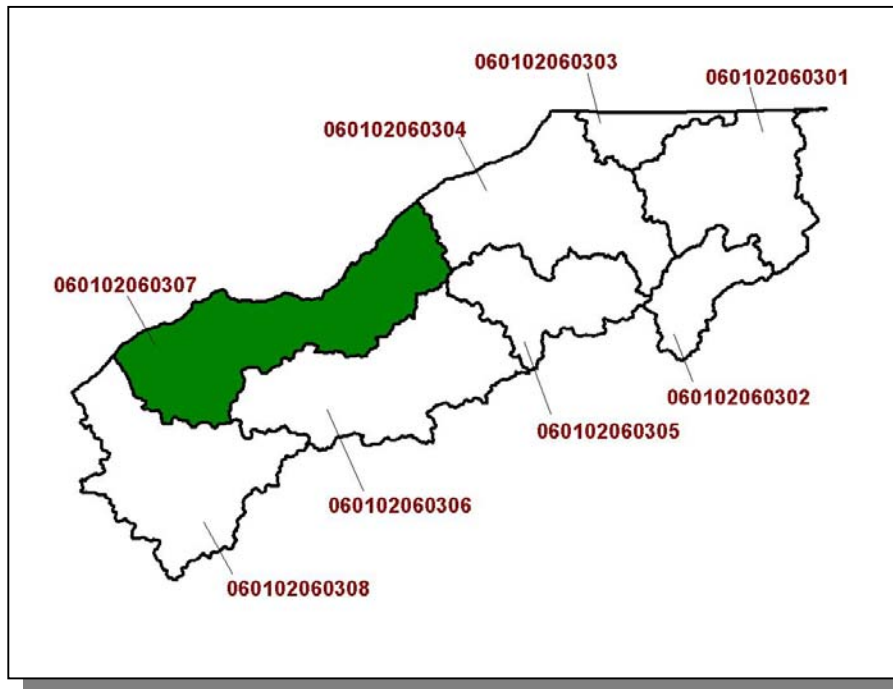
County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Campbell	250.3	250.2	2.6	10.6
Claiborne	167.6	167.6	2.6	12.1
Union	102.5	102.5	0.1	0.0

**Table 4-65. Forest Acreage and Annual Removal Rates (1987-1994) in Campbell, Claiborne, and Union Counties.**

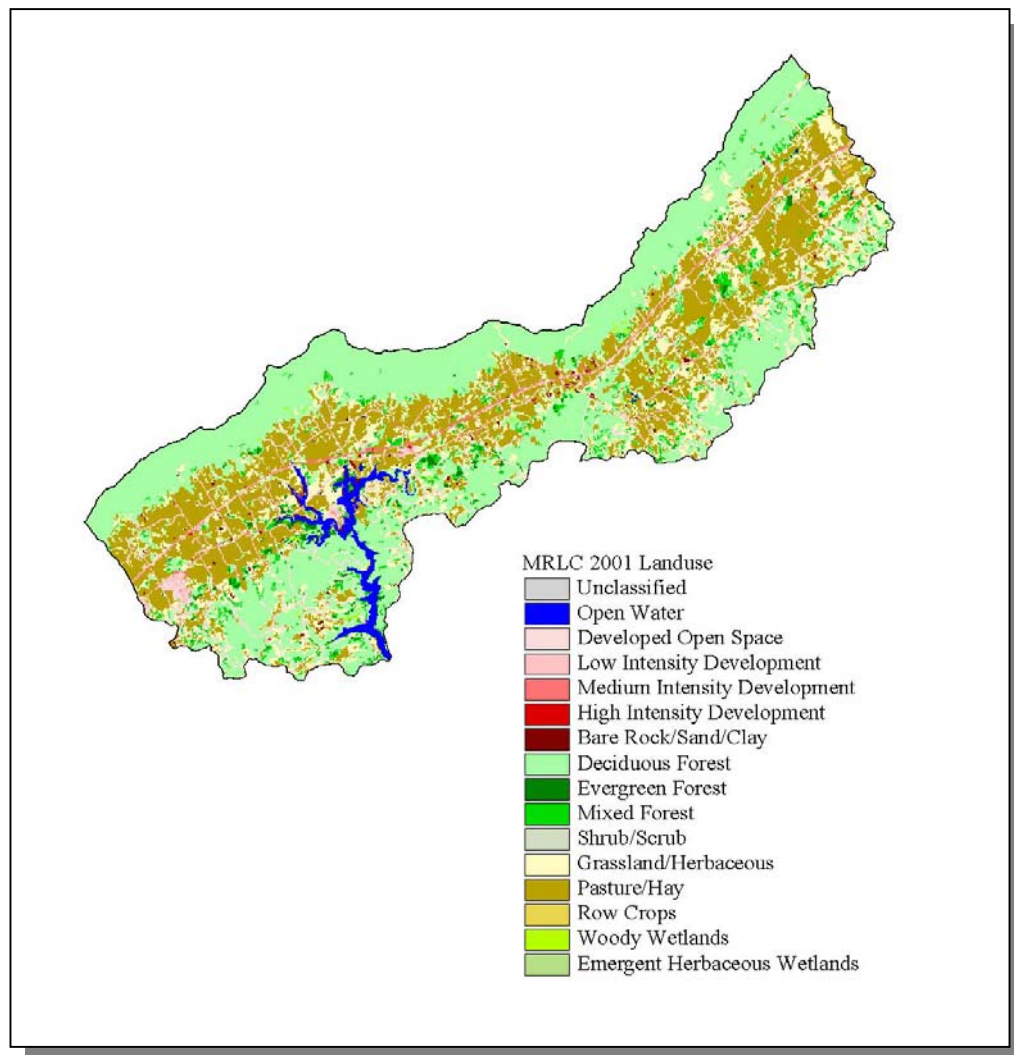
CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.55
Grass (Hayland)	1.89
Legumes, Grass (Hayland)	0.44
Grass, Forbs, Legumes (Mixed Pasture)	1.08
Tobacco (Close-Grown Cropland)	15.11
Other Vegetable and Truck Crops	3.33
Farmsteads and Ranch Headquarters	0.30

**Table 4-66. Annual Estimated Total Soil Loss in Subwatershed 060102060306.**

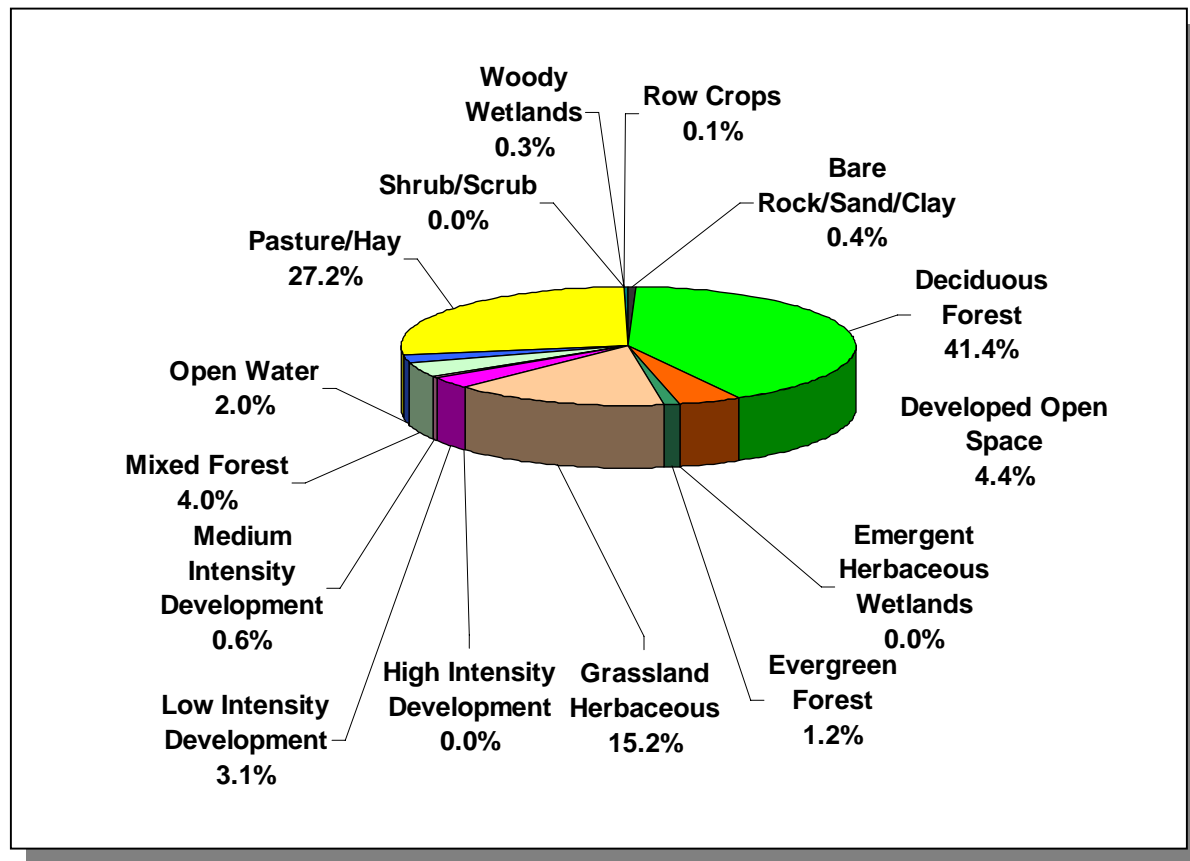
**4.2.B.vii. 060102060307 (Davis Creek).**



**Figure 4-68. Location of Subwatershed 060102060307.** All HUC-12 subwatershed boundaries are shown for reference.



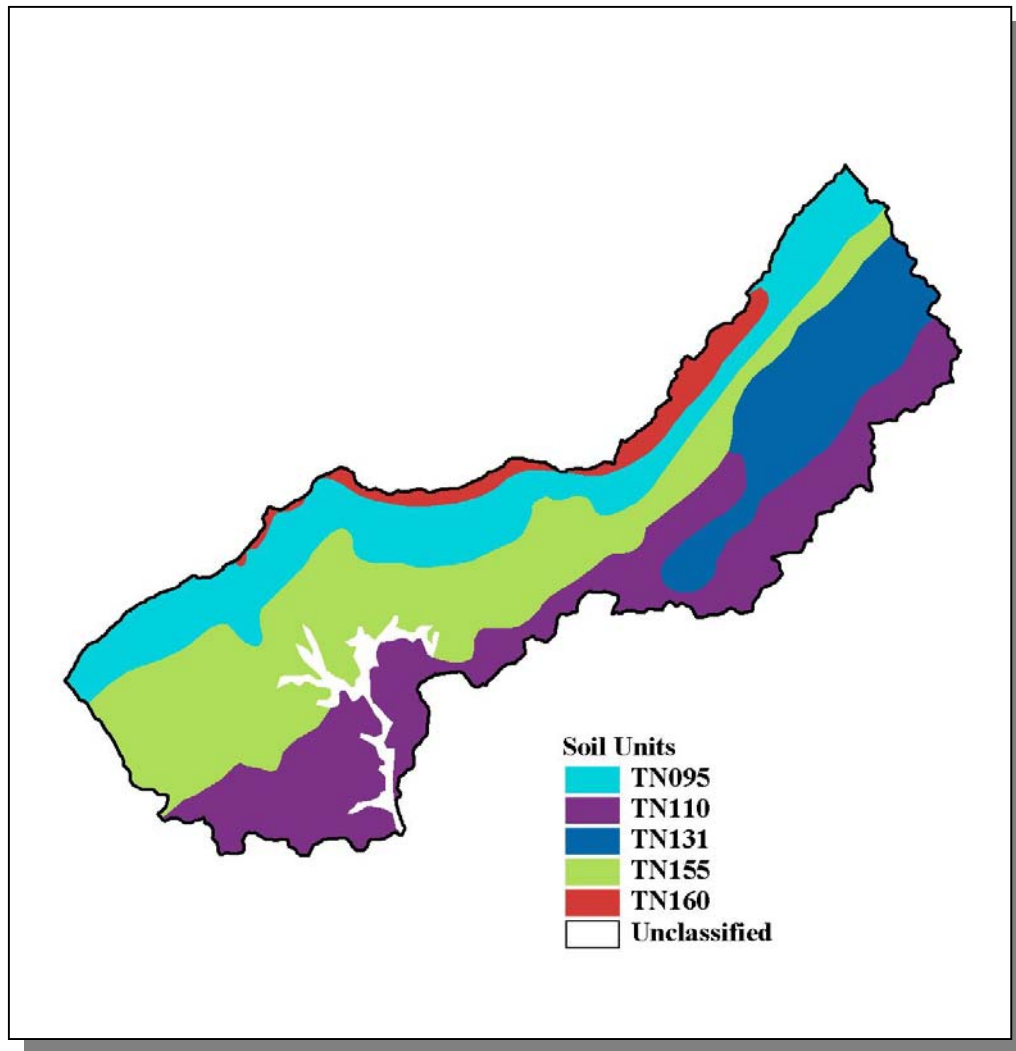
**Figure 4-69. Illustration of Land Use Distribution in Subwatershed 060102060307.**



**Figure 4-70. Land Use Distribution in Subwatershed 060102060307.** More information is provided in Appendix IV.



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**Figure 4-71. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060307.**

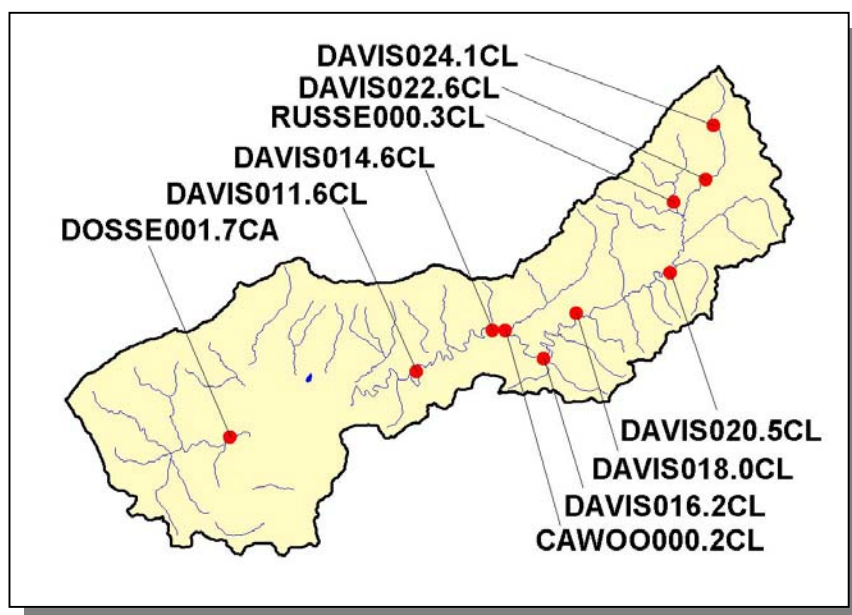
STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN110	0.00	B	2.22	4.96	Loam	0.31
TN131	0.00	C	1.17	4.95	Silty Loam	0.33
TN155	0.00	C	1.71	5.31	Loam	0.32
TN160	0.00	B	2.69	5.36	Loam	0.25

**Table 4-67. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060307.** The definition of "Hydrologic Group" is provided in Appendix IV.

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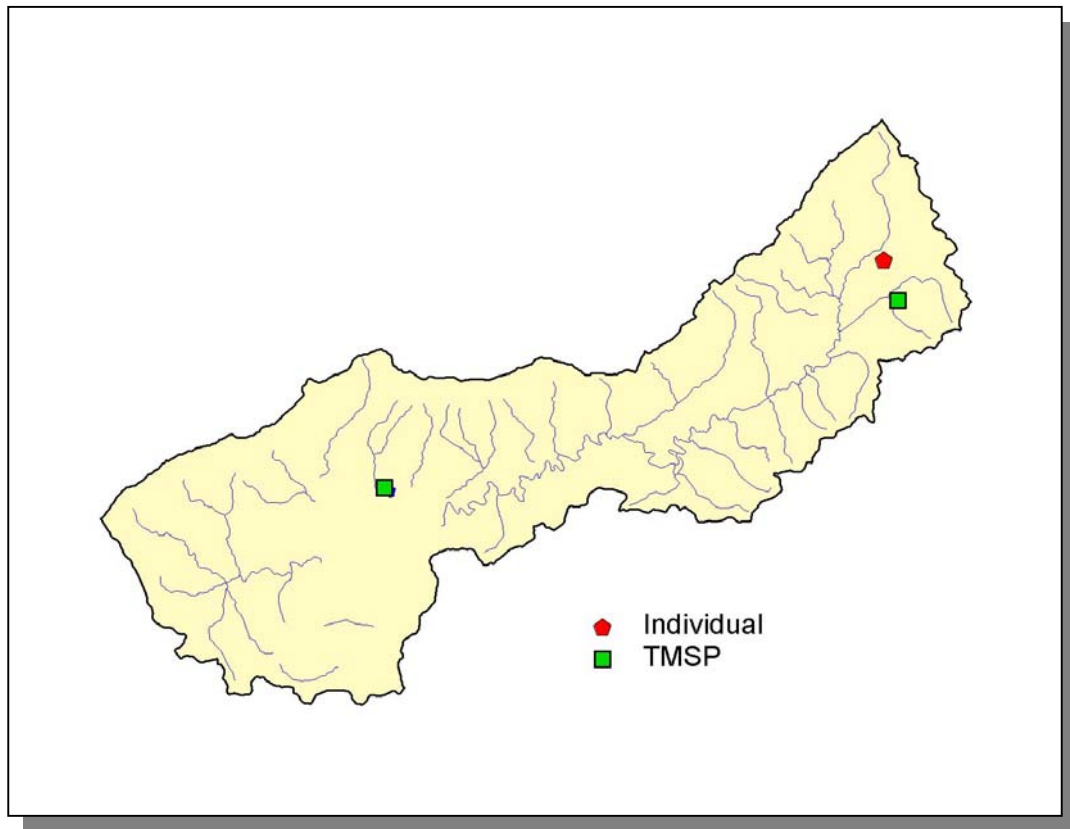
County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Campbell	35,079	37,878	39,854	6.15	2,156	2,328	2,450	13.6
Claiborne	26,137	28,963	29,862	7.22	1,888	2,093	2,157	14.2
Union	13,694	15,956	17,808	0.05	6	7	8	33.3
<b>Total</b>	<b>74,910</b>	<b>82,797</b>	<b>87,524</b>		<b>4,050</b>	<b>4,428</b>	<b>4,615</b>	<b>14.0</b>

*Table 4-68. Population Estimates in Subwatershed 060102060307.*

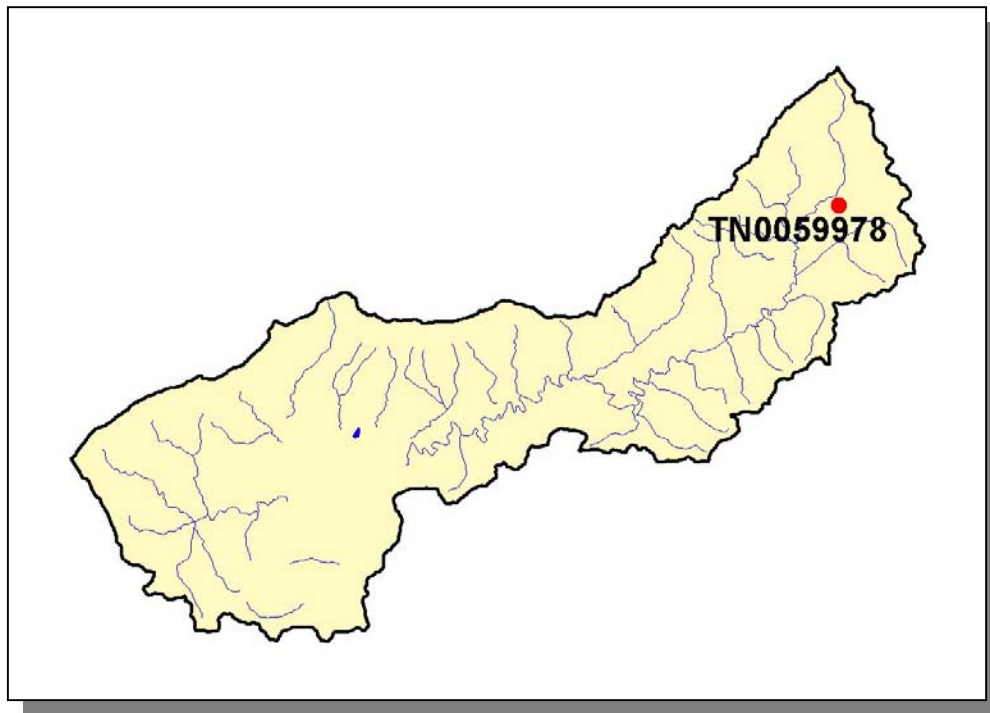


*Figure 4-72. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060102060307. More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.*

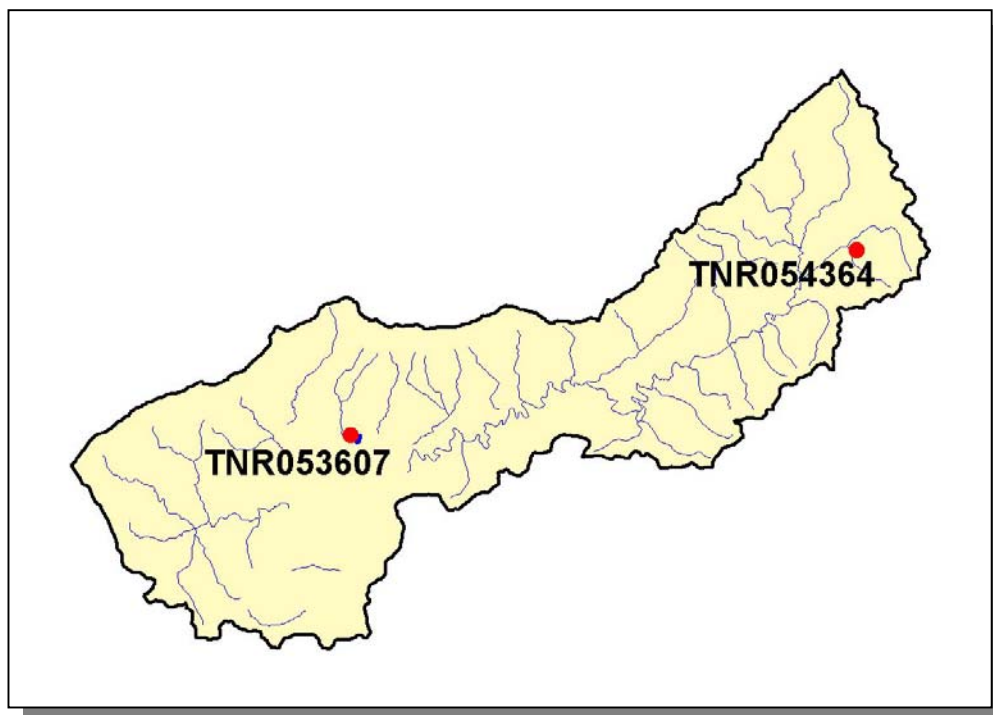
**4.2.B.vii.a. Point Source Contributions.**



**Figure 4-73. Location of Permits Issued in Subwatershed 060102060307.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-74. Location of Active NPDES Sites in Subwatershed 060102060307.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-75. Location of TMSF Sites in Subwatershed 060102060307.** More information, including the names of facilities, is provided in Appendix IV.

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**4.2.B.vii.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
4,133	7,974	177	7	5	23

**Table 4-69. Summary of Livestock Count Estimates in Subwatershed 060102060307.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Campbell	4,083	7,684	66	8	14	0
Claiborne	18,697	36,566	1,082	420	0	165
Union	5,540	10,575	105	981	93	96

**Table 4-70. Summary of Livestock Count Estimates in Campbell, Claiborne and Union Counties.** According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

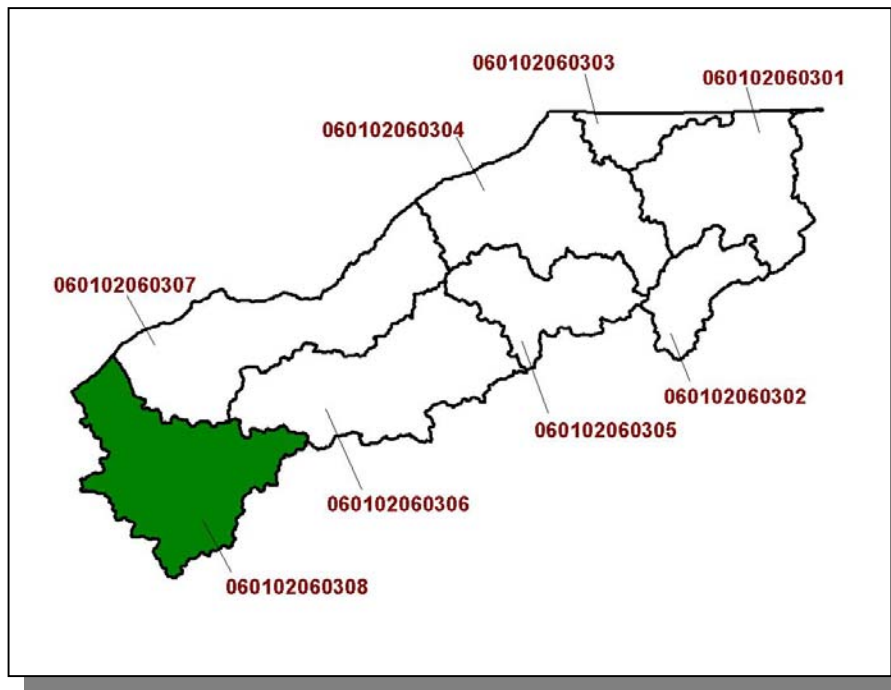
County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Campbell	250.3	250.2	2.6	10.6
Claiborne	167.6	167.6	2.6	12.1
Union	102.5	102.5	0.1	0.0

**Table 4-71. Forest Acreage and Annual Removal Rates (1987-1994) in Campbell, Claiborne, and Union Counties.**

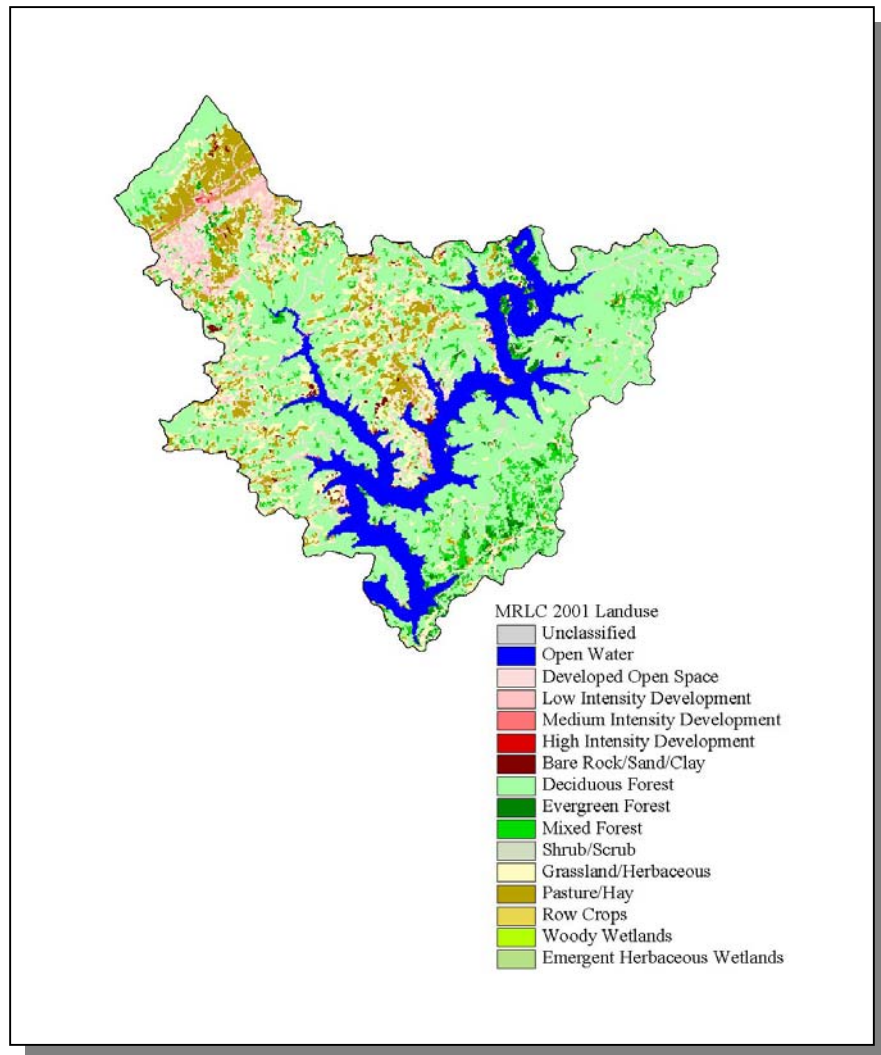
CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	1.03
Grass (Hayland)	1.78
Legumes, Grass (Hayland)	0.44
Grass, Forbs, Legumes (Mixed Pasture)	1.38
Tobacco (Row Crops)	15.11
Other Vegetable and Truck Crops	3.33
Farmsteads and Ranch Headquarters	0.26

**Table 4-72. Annual Estimated Total Soil Loss in Subwatershed 060102060307.**

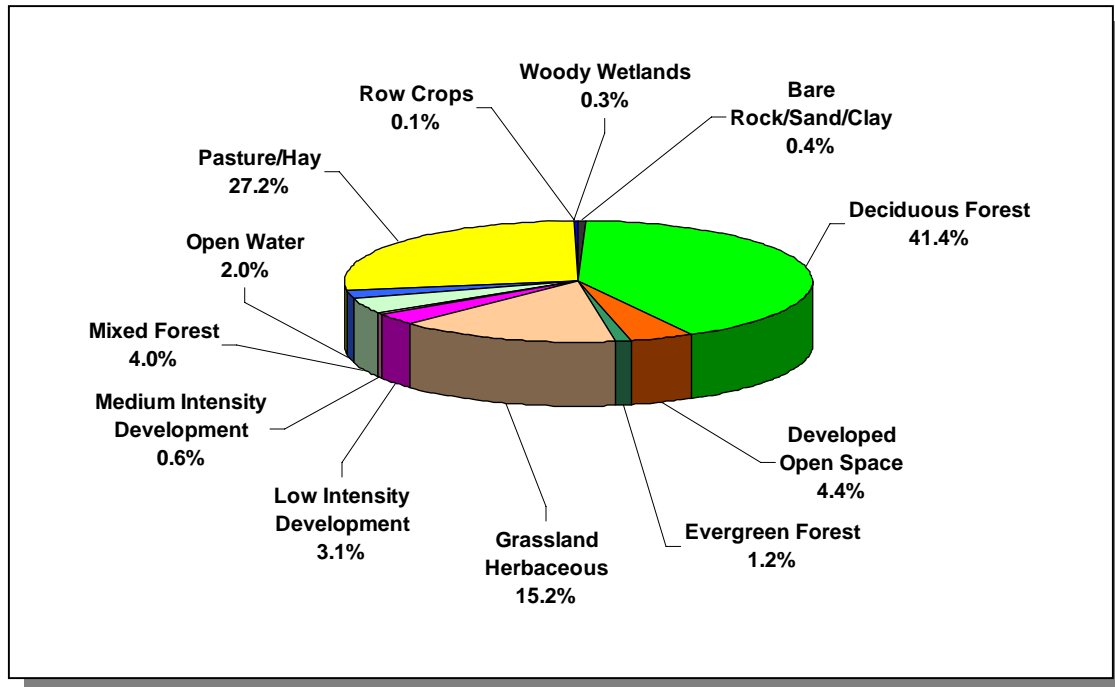
**4.2.B.viii. 060102060308 (Lower Norris Lake).**



**Figure 4-76. Location of Subwatershed 060102060308.** All HUC-12 subwatershed boundaries are shown for reference.



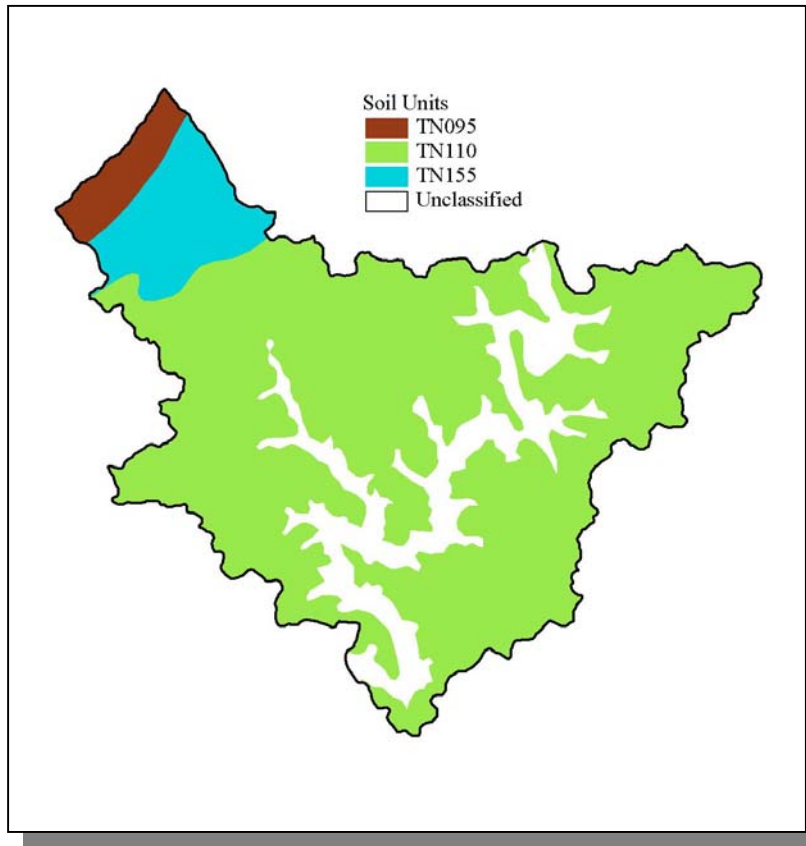
**Figure 4-77. Illustration of Land Use Distribution in Subwatershed 060102060308.**



*Figure 4-78. Land Use Distribution in Subwatershed 060102060308. More information is provided in Appendix IV.*



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**Figure 4-79. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060308.**

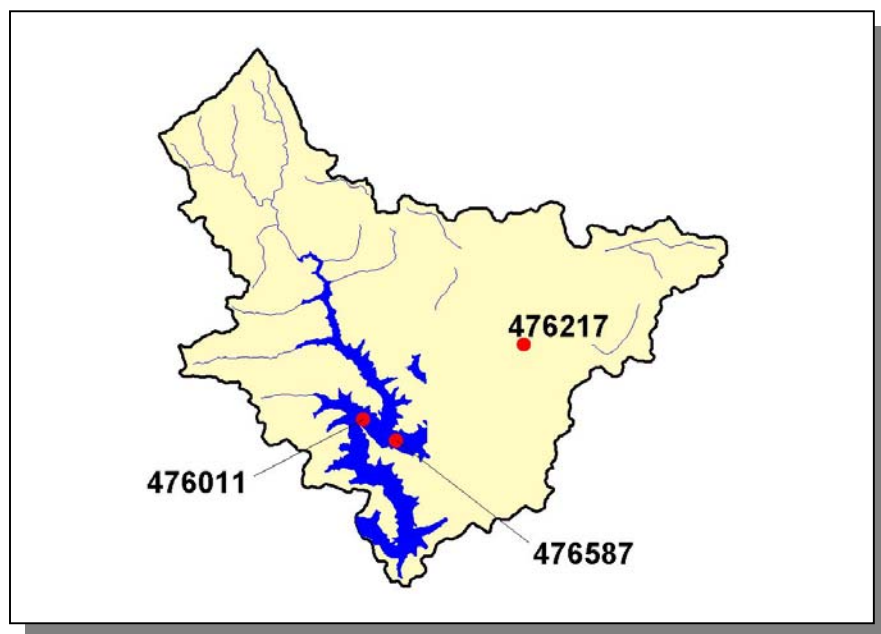
STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN110	0.00	B	2.22	4.96	Loam	0.31
TN155	0.00	C	1.71	5.31	Loam	0.32

**Table 4-73. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 060102060308.** The definition of "Hydrologic Group" is provided in Appendix IV.

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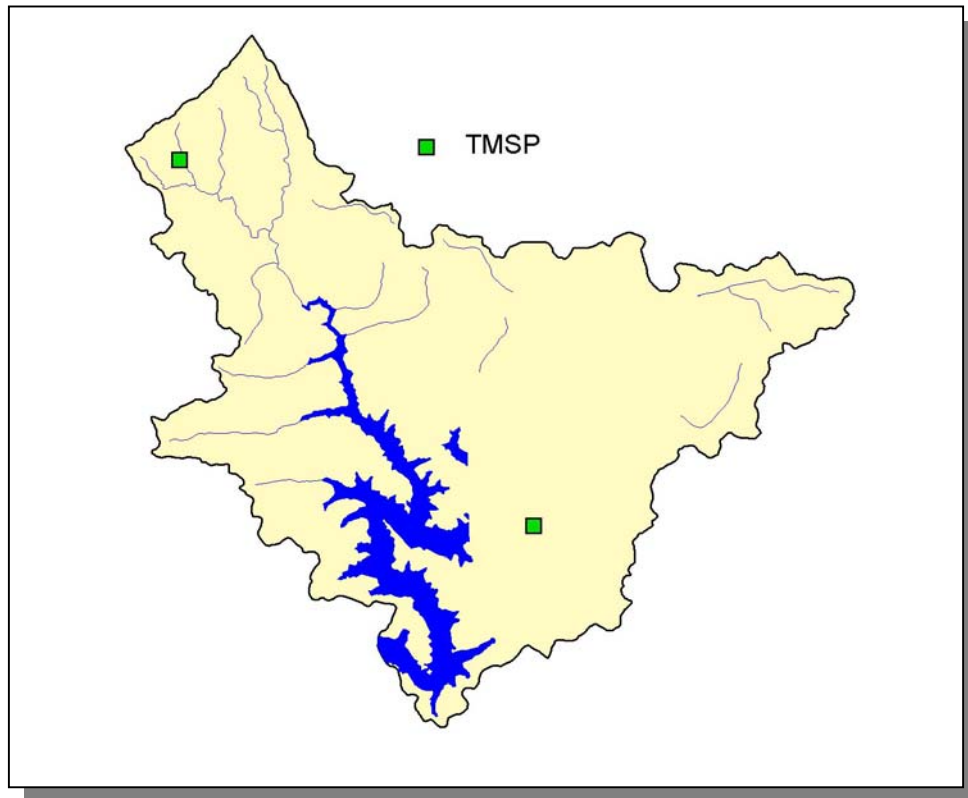
County	COUNTY POPULATION			Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED			% Change (1990-2000)
	1990	1997	2000		1990	1997	2000	
Campbell	35,079	37,878	39,854	8.53	2,991	3,230	3,398	13.6
Union	13,694	15,956	17,808	5.1	699	814	909	30.0
<b>Total</b>	<b>48,773</b>	<b>53,834</b>	<b>57,662</b>		<b>3,690</b>	<b>4,044</b>	<b>4,307</b>	<b>16.7</b>

*Table 4-74. Population Estimates in Subwatershed 060102060308.*

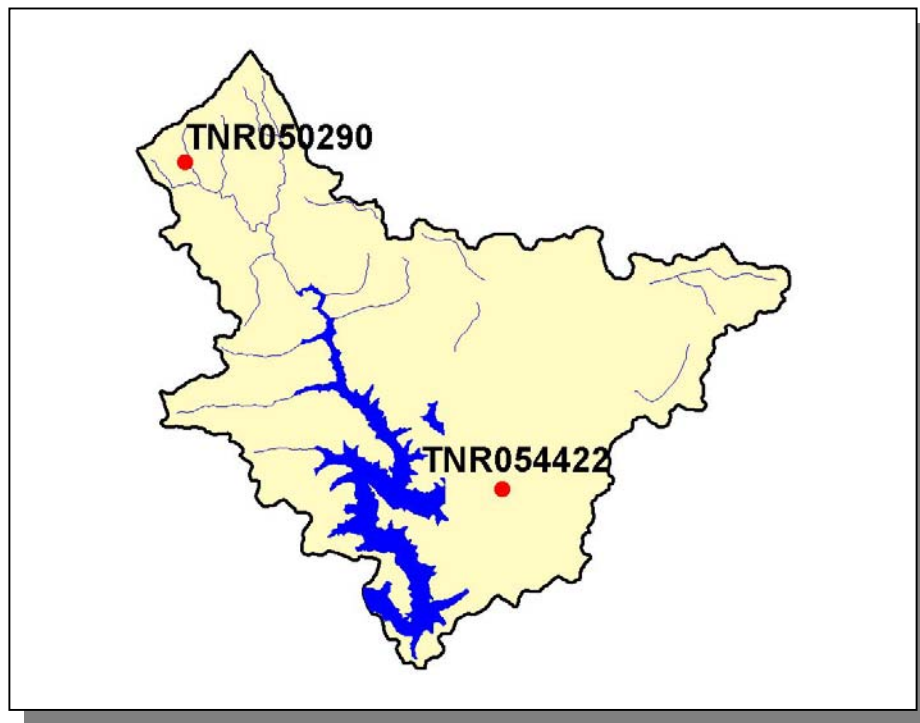


*Figure 4-80. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 060102060308. More information, including site names and locations, and station numbers for sites located in the watershed outside of Tennessee, is provided in Appendix IV.*

**4.2.B.viii.a. Point Source Contributions.**



**Figure 4-81. Location of Permits Issued in Subwatershed 060102060308.** More information, including the names of facilities, is provided in Appendix IV.



**Figure 4-82. Location of TMSP Sites in Subwatershed 060102060308.** More information, including the names of facilities, is provided in Appendix IV.

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**4.2.B.viii.b. Nonpoint Source Contributions.**

LIVESTOCK COUNTS				
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs
932	1,754	15	<5	<5

**Table 4-75. Summary of Livestock Count Estimates in Subwatershed 060102060308.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Campbell	4,083	7,684	66	8	14	0
Union	5,540	10,575	105	981	93	96

**Table 4-76. Summary of Livestock Count Estimates in Campbell and Union Counties.**  
According to the 1997 Census of Agriculture (<http://www.nass.usda.gov/census/>), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Campbell	250.3	250.2	2.6	10.6
Union	102.5	102.5	0.1	0.0

**Table 4-77. Forest Acreage and Annual Removal Rates (1987-1994) in Campbell and Union Counties.**

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	1.45
Grass (Hayland)	1.81
Legumes, Grass (Hayland)	0.44
Grass, Forbs, Legumes (Mixed Pasture)	2.50
Tobacco (Row Crops)	15.11
Other Vegetable and Truck Crops	3.33
Farmsteads and Ranch Headquarters	0.10

**Table 4-78. Annual Estimated Total Soil Loss in Subwatershed 060102060308.**